TEXTILE WORLD

NOVEMBER, 1960
PRICE $1.00

A McGRAW-HILL PUBLICATION

NEW WAY TO SEE MILL PROBLEMS:

It's the "Systems Approach" to Better Management

page 45

At Greenville — Modernization Pace Quickens

page 50

Newest and Best Quality Control Ideas

page 69

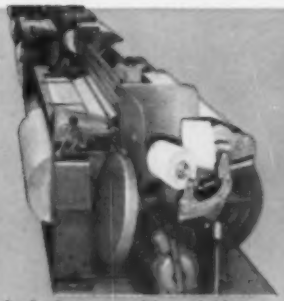
Cotton Finishing: What Researchers Have Found

page 83

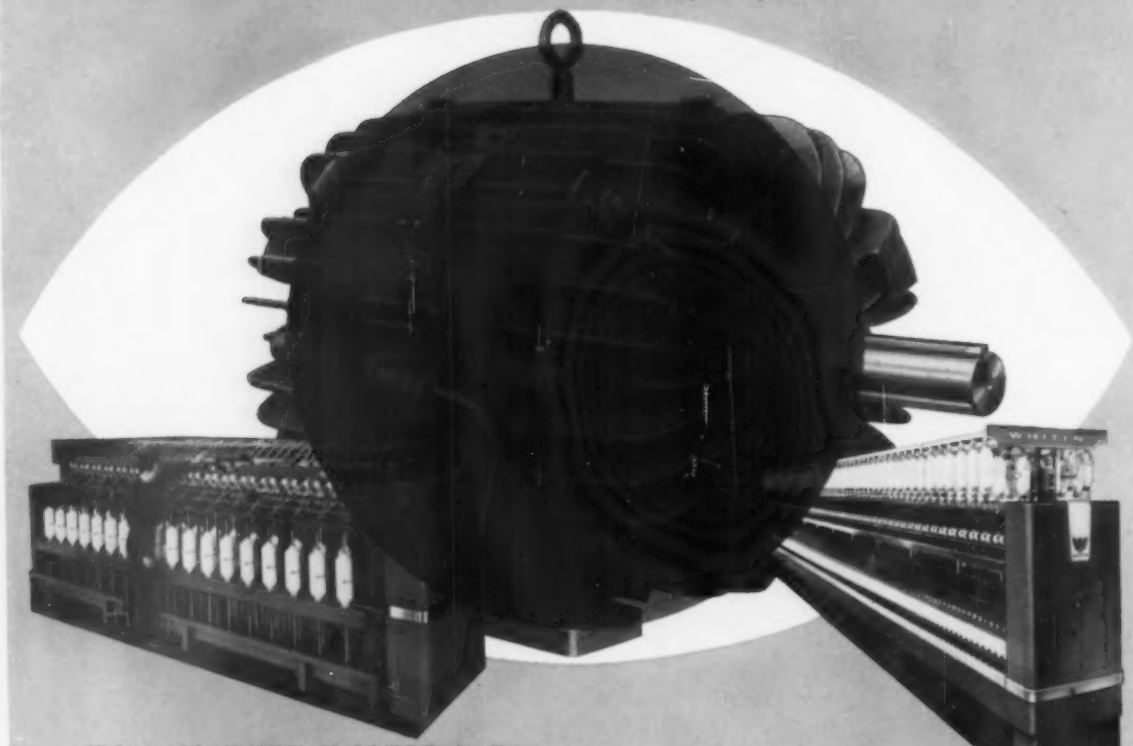
Full Table of Contents

page 4

There are more to these machines than meet the eye...



Smooth, fast starts . . . positive picking and maximum inertia with minimum size. These were Draper's specifications for their new shuttleless loom. DIEHL engineers developed a power transmitter combining an inverted type high inertia motor with a fast, positive clutch-brake mechanism. The result—increased production speeds, economy, and quiet.



High speed for the Whitin Model "P" Roving Frame . . . supplied by DIEHL engineers. The power transmitter incorporates a textile mill type enclosed lint-free motor with an integral mounted air operated disc clutch and an electronic system which automatically controls the speed during start up acceleration. DIEHL will continue to drive the Model "P" indefinitely.

Power the "Piedmont" spinning frame . . . was the problem Whitin had for DIEHL engineers. DIEHL job designed a totally thermal protected motor which provides smooth start and acceleration over its entire operating range.

The result—small size, excessive overload capacity and prevention of yarn breakage.

DIEHL'S engineering service is as much a part of their tradition of quality as are the superior power transmitters they design and build to meet your particular needs. DIEHL originated the power transmitter for the textile industry.

So, when you designate DIEHL, 75 years of experience are working for you.

*Trademark of DIEHL MANUFACTURING COMPANY

Diehl*

DIEHL MANUFACTURING COMPANY

A Subsidiary of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

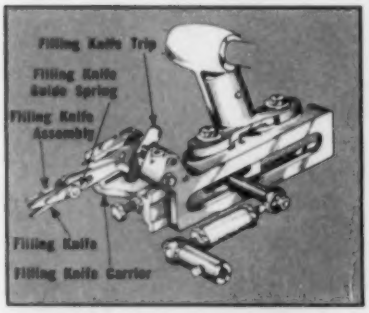
Chamblee (Atlanta) • Charlotte • Needham Heights (Boston) • New York • Philadelphia

2761

DRAPER BRIEFS
NEWS OF INTEREST IN WEAVING

#25, #26, #27 & #28 DRAPER THREAD CUTTERS

A series of thread cutters designed to help weave better cloth at less cost



#25 Draper Thread Cutter

Stafford Thread Cutters were standard equipment on Draper looms until we introduced the #25 Draper Thread Cutter about five years ago. This new and different thread cutter features a simplified construction offering reduced maintenance costs, easier settings, and a filling knife assembly engineered to reduce drag-ins by cutting and holding the filling yarns better.

The #25 Draper is now our most popular thread cutter. It has been furnished generally on most orders for new looms in recent years. It has also been applied to existing Draper looms in 375 mills where, to a varying extent, it replaces Stafford Thread Cutters.

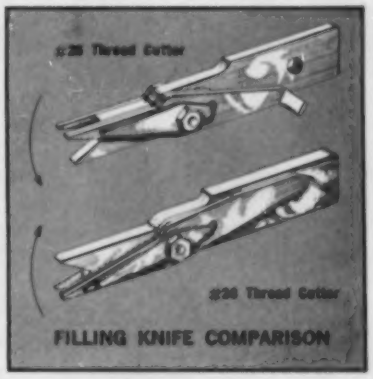
#26 Draper Thread Cutter

This thread cutter is similar to the #25 except that it has been modified as follows:

1. The Filling Knife assembly has been lengthened to permit positioning Filling Knife Carrier parts farther from the Lay. This gives a broader range of adjustment under all loom Battery conditions and makes the attainment of a correct setting easier.
2. To ensure adequate tension control with the lengthened Filling Knife, a second Filling Knife Guide Spring is incorporated so that there is a spring on each side of the knife assembly.
3. A much thicker Filling Knife, providing a longer tail on the filling between the cutting and holding side of knife, affords additional protection against a possible pull-out from knife, *especially in weaving filament yarns.*
4. As a further precaution against drag-ins, the camming surface of the Filling Knife Trip has been lengthened to prevent premature opening of the knives caused by improperly set Filling Cams.

#28 Draper Thread Cutter

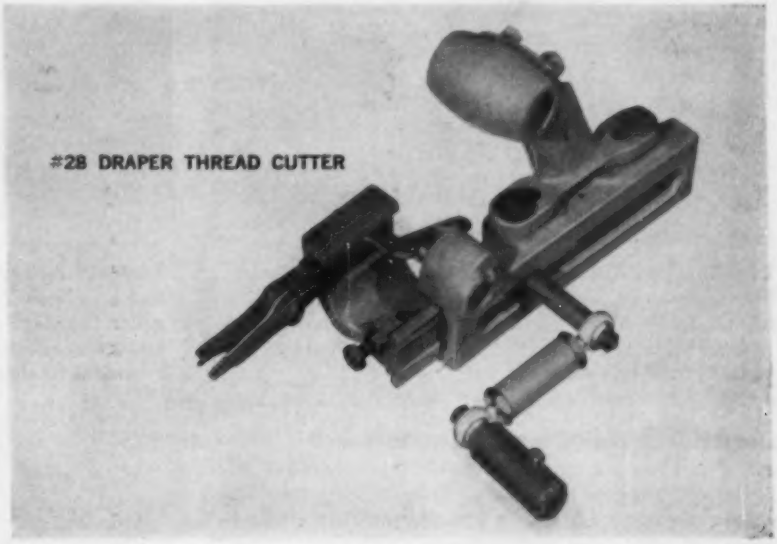
The #28 Thread Cutter is a brand-new construction. It is the same as the #26 except that the cutting action is reversed, being from the bottom upward like our Stafford Thread Cutters.



FILLING KNIFE COMPARISON

#27 Draper Thread Cutter

This thread cutter is the same as the #28 Thread Cutter except that the Filling Knife is of conventional thickness (1/8") like the #25 Draper and our Stafford Thread Cutters.


#28 DRAPER THREAD CUTTER

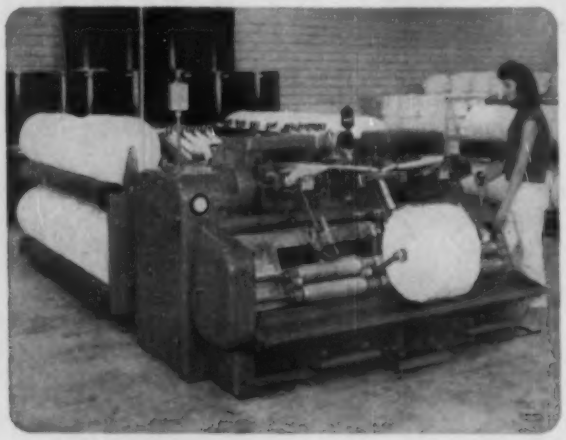
DRAPER CORPORATION • HOPEDALE, MASS.

ROBERTS

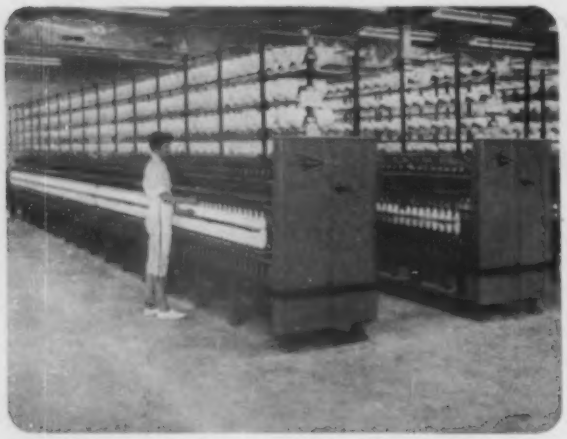
YARN MAKING MACHINERY

for Cotton, Worsted, or Long Fiber Systems

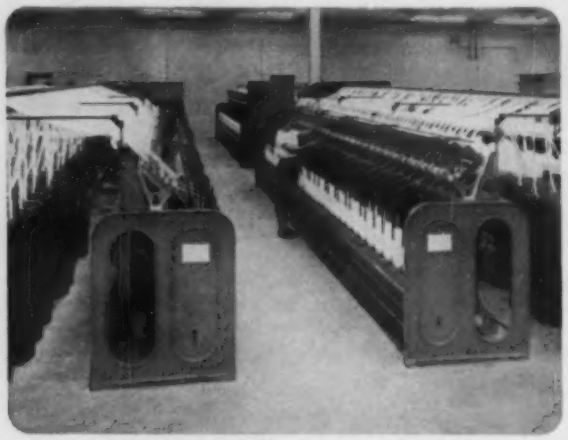
ROBERTS ARROW SPINNING for both cotton system and long fiber system yarn spinning for natural and synthetic fibers and blends. High speed, all ball bearing, big package Arrow Spinning Frames in 25-inch or 36-inch width. Exceptional flexibility and simplicity of operation in the manufacture of improved quality yarns at reduced costs and modest initial investment.



ROBERTS-TEMATEX worsted system preparatory machines, including ParaBlenders, ParaDrafters and AutoEveners, are rugged, high performance machines for pinning, parallelizing, drafting and blending worsted and synthetic fibers prior to roving and spinning, and in top making plants. AutoEvener automatically and instantaneously corrects delivered sliver weight to within plus or minus 1%.



ROBERTS TWISTERS for plying yarns are completely ball bearing equipped and designed for high speed ring twisting operations. 25- or 36-inch frames. Up to 3½-inch rings and 12-inch bobbins. Package weights 1¼ pounds on cotton, ¾ to 1 pound on worsted.



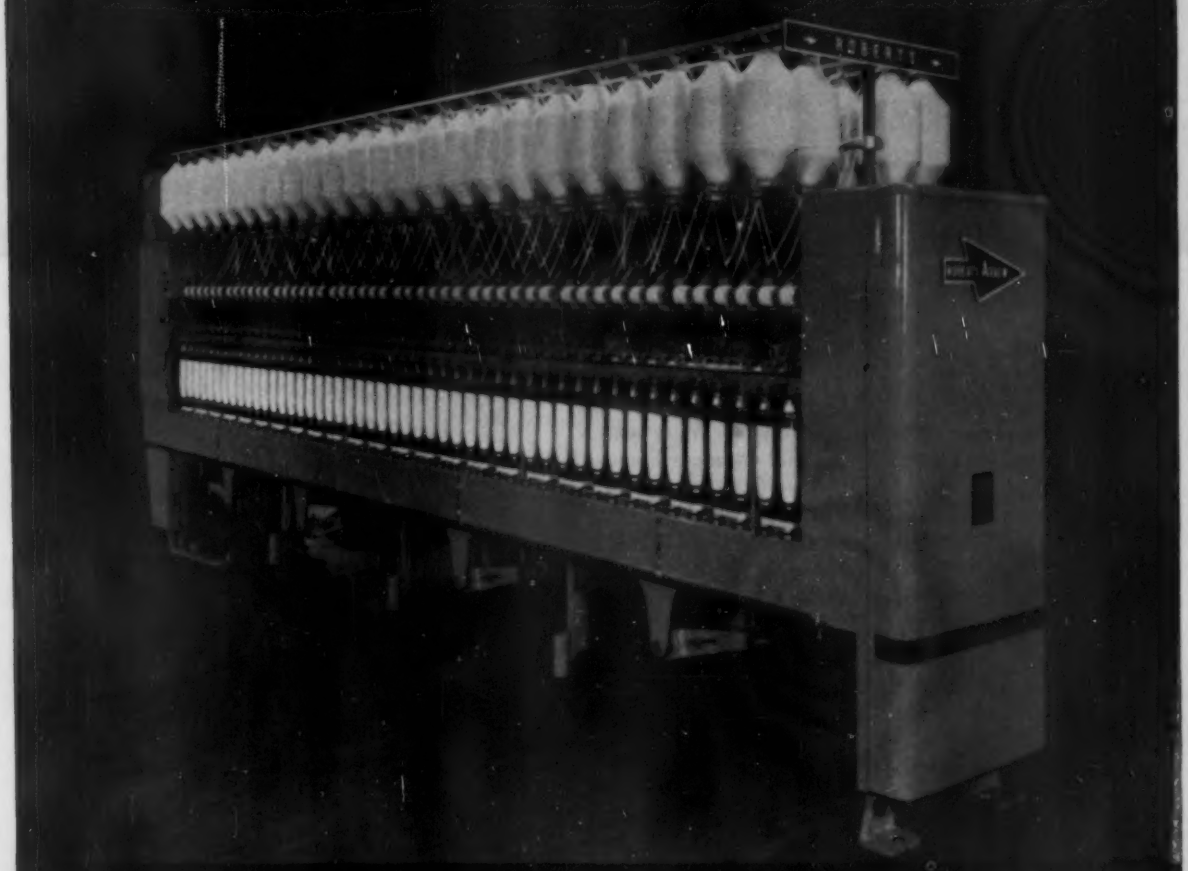
ROBERTS ROVING FRAMES are ball bearing rebuilt and feature all-new heavy duty ball bearing Roberts Double Apron Drafting Systems for cotton, short staple or long fiber synthetics, worsted and blends. 10x5 and 12x7 packages. Provisions for double headed spools.

Simplicity of design, rugged construction and high speed ball bearing operation are the trade marks of all Roberts Company machinery. Roberts also supplies rebuilt spinning frames and modernization changeovers for mills' existing machinery.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

ROBERTS ARROW SPINNING



Versatility For All Yarn Counts!

Arrow Spinning Frames are available to run all yarn counts from 2's to 120's. More than 1000 Arrow Frames are in service at large and small mill organizations in the U. S. A.

Several examples are provided at the right which demonstrate the versatility of Arrow Spinning.

The newly refined Arrow offers greatest value in high speed operation, bigger packages, dependable performance, low initial cost, and maintenance-free operation. Arrow Spinning is available for both cotton and worsted systems.

Roberts Technical Service backs up every Roberts installation with intelligent understanding of the mill's requirements and ambitions.

THREE MILLS RUNNING ARROW FRAMES ON A WIDE RANGE OF YARN NUMBERS

- An independent producer of Osnaburgs and Corduroys runs 62 Arrow Frames with 20,000 spindles making 3.25's to 8.25's warp spun filling yarn on 3" rings and 12" bobbins; 8's to 21's warp yarn on 3" and 2½" rings and 12" bobbins; and 14.5's to 22.5's direct spun filling yarn on 1-9/16" rings and 8¾" quills.
- A major mill group uses 50 Arrow Frames with 16,000 spindles to produce 80's to 100's combed long fiber cotton yarn for fine broadcloths on 1¾" rings and 10" bobbins.
- A small carded knitting yarn mill uses 20 Arrow Frames with 5040 spindles to run 26's yarn on 2¼" rings and 11" bobbins.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

CIRCLE 3 ON READER SERVICE CARD

TEXTILE WORLD

VOLUME 110, NO. 11 NOVEMBER, 1960

PUBLISHER
Donald H. White
CHIEF EDITOR
Walter A. Stanbury
MANAGING EDITOR
Edward W. Ziegler
SENIOR ASSOCIATE EDITOR
Richard B. Pressley
ASSOCIATE EDITORS
William G. Ashmore
Robert W. Pinault
T. Benton Savisaar, Jr.
ART DIRECTOR
Robert E. Wolk
COPY EDITOR
Carol Wilhelm
EDITORIAL ASSISTANT
Patricia Quinn

Editorial — Soundest Answer to Imports 43

MANUFACTURING AND MANAGEMENT

The Systems Approach—New Key to Better Mill Profits
Here's a prescription for the mill manager harried by inventory problems 45

Modernization Pace Quickens at Greenville
Managers near the time of decision on new capital investment 50

How 4 Mills Do the Work of 6
American Thread's $3-million modernization investment pays off impressively 54

South Texas Cotton: Not Bad
Here's a rundown on what you can expect of this season's South Texas fibers 61

Small Mill in a Hurry: Doubles Sales in 3 Years
West Georgia Mills concocts a straightforward program for growth. Here's How 62

Easy Way to Save $3,000
By making your mill a safer place to work, you'll rack up big savings 66

Quality Control, Fall 1960: Latest (and Best) Ideas
Highlights of the recent Textile Quality Control Association meeting 69

Paying the "Mistake Tax"—Pointers for Supervisors 73

Why You Need Preventive Maintenance—and How to Get It
Authoritative word on setting up your own plant-engineering program 114

Cost Cutters 118

CHEMICAL TREATMENT AND FINISHING

Section Contents Page 75

News of the Month in Textile Chemicals 77

What's New in Dyes and Chemicals 80

Latest Word on Cotton Finishing 83

Cluett, Peabody's 3-Part Formula for Better Finishing 88

How Print Work Agers Operate—Part 2 94

CONSULTING EDITORS
C. Harris Rabold
William A. Newell
Leopold Licht

CONTRIBUTING EDITORS
E. H. Halliwell
H. S. Knowlton

WORLD NEWS BUREAUS
John Wilhelm, Director
Margaret Ralston, Managing Editor
Washington: George B. Bryant Jr., Chief; John C. L. Donaldson
Atlanta: B. E. Barnes
Chicago: Stewart W. Ramsey
Cleveland: Arthur Zimmerman
Detroit: Donald MacDonald
Dallas: Marvin Reid
San Francisco: Jeanne Keene
Los Angeles: Kemp Anderson
Seattle: Ray Bloomberg
London: John Shinn
Paris: Robert E. Farrell
Tokyo: Sol Sanders
Bonn: Morris Helitzer
Moscow: Ernest Conine
Mexico City: Peter Weaver
Caracas: John Pearson
Hong Kong: Stan Rich
Zurich: Raymond Shah
Milan: Gene Di Raimondo
Melbourne: Alicja Grobtsch

ADVERTISING AND BUSINESS DEPARTMENT
Walter C. McMickle, Advertising Sales Manager
Thomas Macaluso, Business Manager
Howard J. Barnard, Circulation & Promotion

DISTRICT MANAGERS
Robert W. Horst, Atlanta 3
Ralph L. Chisholm, Boston 16
David W. Cooke, Chicago 11
Robert J. Edsall, Cleveland 13
J. R. Pierce, Dallas 1
J. W. Patten, Denver 2
F. E. Holland, Houston 25
B. S. McGinnis, Los Angeles 17
Stokes T. Henry, New York 36
H. C. Harvey, Philadelphia 3
Thos. Carmody, San Francisco 4
Stanley Kimes, Frankfurt
Malcolm Thiele, London
M. R. Zoysal, Geneva

ECONOMIC SERVICES
Douglas Greenwald, Manager
William J. Brown, Textile World Index

MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS AND AUDIT BUREAU OF CIRCULATIONS

A McGRAW-HILL PUBLICATION

© Copyright 1960 by McGraw-Hill Publishing Co., Inc. (All rights reserved)

Postmaster . . . Please send form 3579 to Fulfillment Manager, Textile World, 330 W. 42nd St., New York 36, N. Y.

LATE NEWS

TEXTILE WORLD Late Report

Economic Indicators 21
News and Comment 22
Washington Outlook 24

News of the Month in Textile Chemicals 77

What's New in Fibers, Yarns, and Fabrics 125

DEPARTMENTS

News from the Mills 121

Equipment and Supply News 131

Calendar 160

New Literature 162

Advertisers' Literature 168

News About Suppliers 172

News About Men 177

Advertisers' Index 188

Reader-Service Card 189

Coming Next Month: What Are Your People Thinking?

At a recent exit interview at a large textile mill, management discovered it was losing a promising young executive because he thought his company wasn't making full use of his talents. Wasn't challenging him to give all he had. Another mill—a cotton-finishing specialty house—discovered (after wasting a lot of time flailing about) that its supervisors weren't giving clear job instructions to hourly workers. High quit rates, low quality standards, inflated costs—these are just three signs that employees aren't performing up to par, perhaps because their attitudes are wrong. Next month you'll read about a new management method—the employee attitude survey—that can help you spot attitude troubles before sagging morale does serious damage. Be on the lookout for November's TEXTILE WORLD and its lead article—**"How to Take an Employee Attitude Survey."**

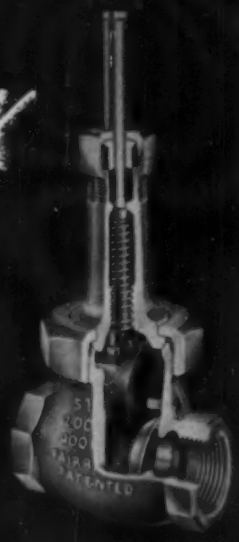
TEXTILE WORLD, Henry G. Lord founder. Published monthly with an additional issue in July, by McGraw-Hill Publishing Co., Inc. PUBLICATION OFFICE: 99-129 North Broadway, Albany 1, N. Y. See panel below for directions regarding subscriptions or changes of address. EXECUTIVE, SUBSCRIPTION, AND ADVERTISING OFFICES: 330 West 42nd Street, New York 36, N. Y. EDITORIAL OFFICES: 330 West 42nd Street, New York 36, N. Y. and 201 East Coffee Street, Greenville, S. C.

Officers of the Publications Division: Nelson L. Bond, President; Shelton Fisher, Wallace F. Traendly, Senior Vice Presidents; John R. Callaham, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator. Officers of the Corporation: Donald C. McGraw, President; Joseph A. Gerardi, Hugh J. Kelly, Harry L. Waddell, Executive Vice Presidents; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary.

SUBSCRIPTIONS are solicited only from executives, engineers, chemists, and technicians in textile manufacturing companies and finishing plants. Position and company connection must be indicated on subscription order. Single copies $1.00. Subscription rates: United States and Possessions and Canada, $2.00 a year; all other countries, $20.00 a year. Second-class postage paid at Albany, N. Y. Printed in U.S.A. Title ® registered at U.S. Patent Office

Address correspondence and change of address to Fulfillment Manager, TEXTILE WORLD, 330 West 42nd Street, New York 36, N. Y. When address is changed, subscribers should give old as well as new address, including postal zone number. Enclose recent address label if possible. Allow one month for change to become effective.

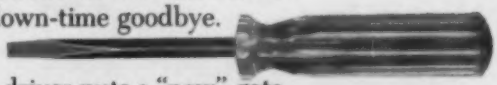
MAYBE HORSES THINK SEAT RINGS NEVER NEED REPLACING...



but what do horses know about valves?

You know from bitter experience that when pipe chips, boiler scale or other hard particles catch between wedge and seat, the wedge will be damaged and the seat will be scored. You have to replace both wedge and seat or dump the valve. And no horse can tell you different!

But, if you've installed FAIRBANKS RENEWABLE SEAT RING GATE VALVES, you kiss down-time goodbye.
(PATENTED)



Because a set of seat rings and a screw driver puts a "new" gate valve on your line in minutes. And, you don't ever remove the valve body from the line!

That's why it's so important to you to know that no other valve in the world looks like this when you remove the bonnet. No other gate valve gives you such savings in down-time, maintenance time and inventory costs.

Yours on Request: Informative, colorful brochure giving complete facts about Fairbanks Renewable Seat Ring Gate Valves. Write without obligation.

THE **Fairbanks** COMPANY

Executive Office: 393 Lafayette Street, New York 3, N. Y.

520 Atlantic Avenue, Boston 10, Mass.
2600 S. Throop Street, Chicago 8, Ill.
393 Lafayette Street, New York 3, N. Y.
15 Stanwix Street, Pittsburgh 22, Pa.
202 Division Street, Rome, Georgia

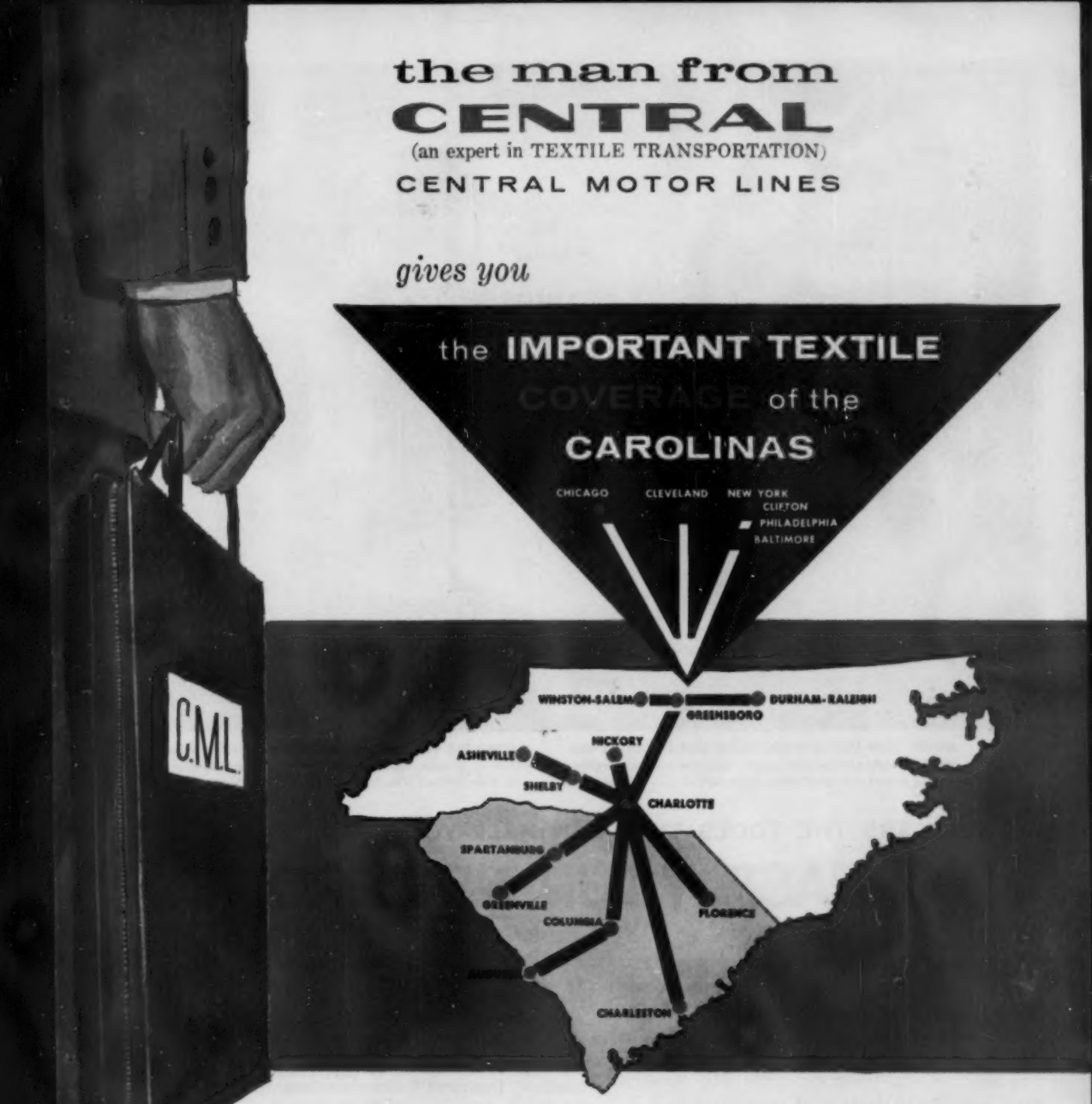
FACTORIES: Binghamton, N. Y. and Rome, Ga.

the man from CENTRAL

(an expert in TEXTILE TRANSPORTATION)

CENTRAL MOTOR LINES

gives you

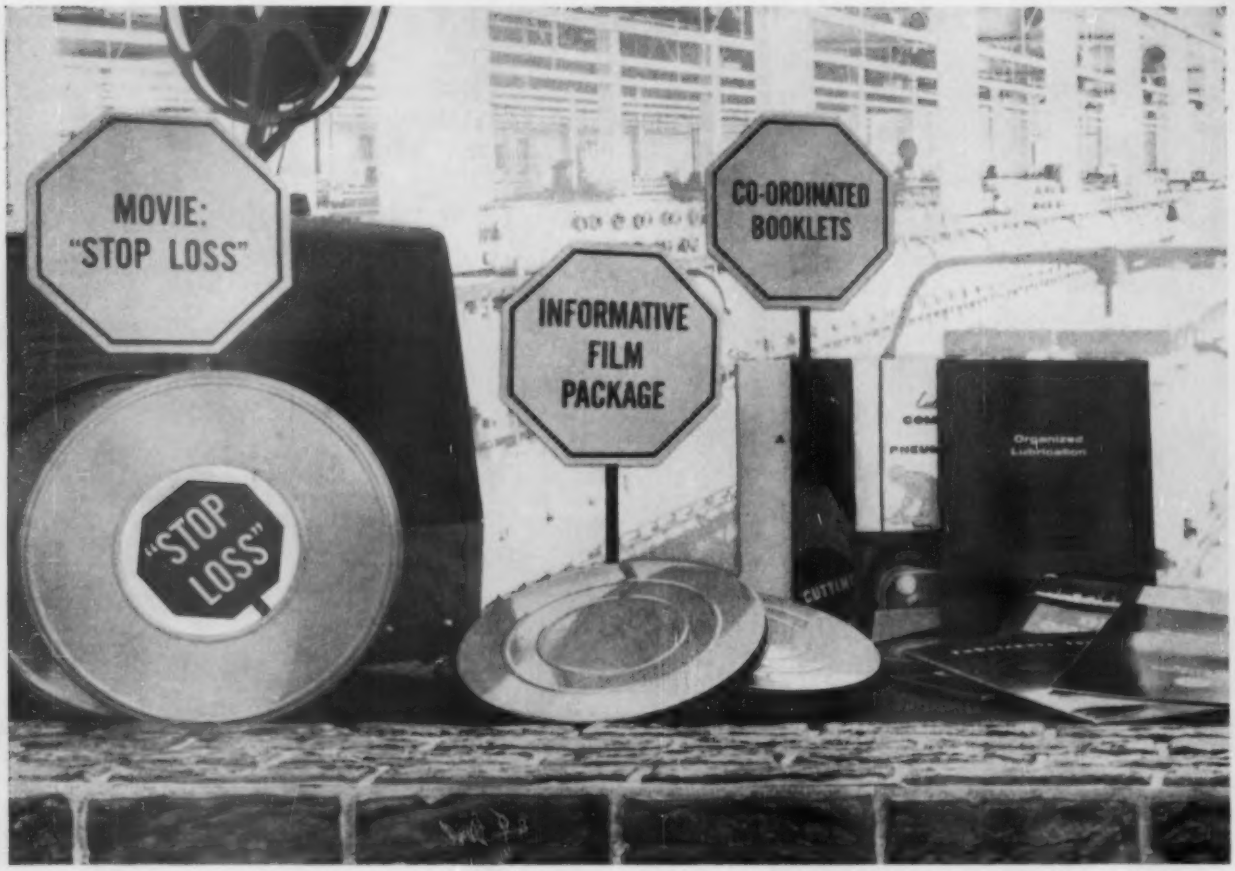


Here is a dependable, single-line service offering blanket coverage of *every* point in South Carolina...and coverage of the *most important* industrial areas in North Carolina . . . by the carrier providing maximum coverage and service on *all size shipments.*

Linking the Carolinas with the East and West

CENTRAL MOTOR LINES, Inc. • General Offices: Charlotte 1, North Carolina

CIRCLE 7 ON READER SERVICE CARD



MOVIE: "STOP LOSS WITH ORGANIZED LUBRICATION," a new 20-minute color-and-sound film that dramatizes the opportunities for cost control through Organized Lubrication.

INFORMATIVE FILM PACKAGE for mill departments consists of movies on greases, hydraulic oils, cutting oils, etc., designed to help those involved with their selection and application.

HERE ARE THE TOOLS THAT CAN HELP YOU

INCREASE YOUR NET PROFITS

Texaco's new "Stop Loss" Program is designed to cut maintenance costs by modernizing lubrication practices. If yours is an average mill, the results can add 4 per cent to your net profit.

Even if your mill is a highly efficient operation, it is *still* virtually certain that there is an opportunity for cost control that you are overlooking—either partially or completely. It involves your lubrication practices.

Here's the reasoning: Most equipment failures can be traced, either directly or indirectly, to improper lubrication practices. Organized Lubrication could have prevented the failure—and the resultant savings would have gone directly into profits.

The 4 per cent figure is not hypothetical. It's what the Small Business Administration has found the average U. S. industrial operation can tack on to profits by *organizing its lubrication.*

Texaco's Program is designed to help you. Texaco has developed a "Stop Loss" Program specifically designed to help you cut maintenance costs via better lubrication practices. It will help you stretch equipment life, minimize downtime, reduce lube inventory, even cut purchasing costs. It costs virtually nothing to install, yet will start turning maintenance savings into profits almost immediately.

CO-ORDINATED BOOKLETS covering almost every facet of lubrication can be used as guides in specific areas.

TEXACO LUBRICATION CONTROL SYSTEM takes the guesswork out of all lubrication scheduling—makes sure that the right lubricant goes in the right place at the right time.

BY AS MUCH AS 4 PER CENT!

Can your mill pass this test?

Q. Is there anyone in your mill with direct responsibility for all lubrication? Yes ☐ No ☐

Q. Is there any mill-wide system for making sure that equipment gets lubricated on schedule? Yes ☐ No ☐

Q. Are your oilers qualified men with a knowledge of the mechanisms to be lubricated? Yes ☐ No ☐

Q. Have you made a lubrication study to determine if the right lubricants are being used at the proper frequencies? Yes ☐ No ☐

If the answer is "no" to any of the above questions, it's virtually certain that a Texaco "Stop Loss" Program can improve your profit picture.

See for yourself how "Stop Loss" works! Texaco has just released a new color-and-sound movie to dramatize the benefits of good lubrication practices. It's called "Stop Loss With Organized Lubrication" and we think it would be profitable for you to see it. For an early showing in your mill, mail the coupon today! Texaco Inc., 135 East 42nd Street, New York 17, New York.

MAKE YOUR RESERVATION TODAY!

TEXACO INC., Dept. TW-31
135 East 42nd Street
New York 17, N. Y.

I would like to see your new movie "Stop Loss With Organized Lubrication." Please call to arrange a showing.

Name_____ Title_____

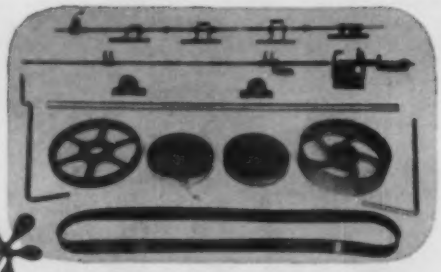
Firm_____

Address_____

City_____ Zone____ State_____

TEXACO

Ideal has eliminated these enemies of quality and long service . . .



Virtually Vibrationless

(even at super speeds)

Ideal Drafting* Gives Longer Service

New Ideal Feathertouch Drafting runs far more smoothly at 750 feet per minute than pre-Ideal drafting did at 120 feet. Here are some of the features which Ideal engineered to produce this astonishing result.

Ideal Electro-Magnetic Clutch This clutch eliminates the pulleys, belts, countershafting, rockershafts, etc. shown in the picture above. These are all enemies of smooth operation and long frame life.

Smooth Instant Stops The positive braking action of the clutch assures smooth instant stops at all speeds.

Smooth Starting The clutch, operating through a rheostat, permits the frame to be started slowly and gather speed quickly, but not abruptly.

. . . with Electro Magnetic Clutch

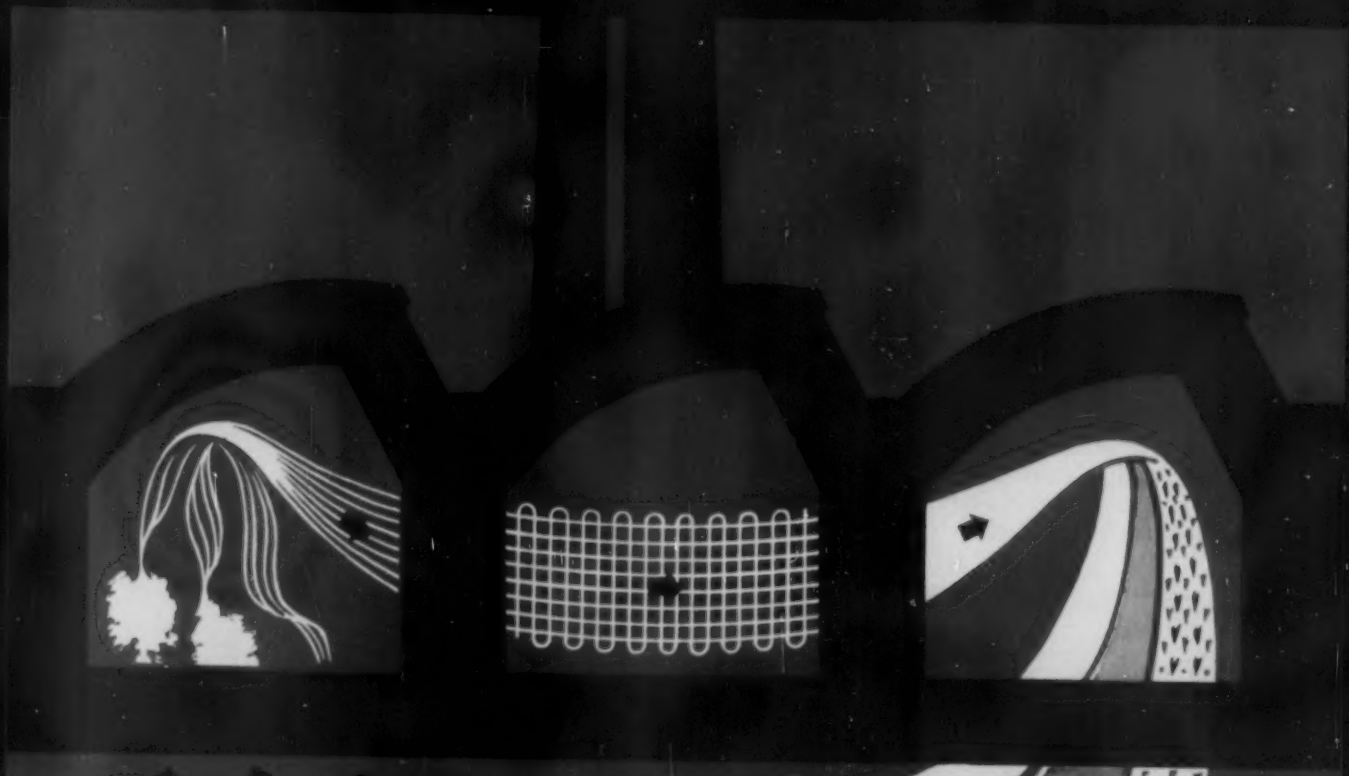
Ball Bearings All turning parts are equipped with permanently sealed and lubricated ball bearings. Ideal patented ball bearing spacing sections keep the rolls perfectly aligned and synchronized at all times. Ideal coiler tube assemblies are suspended above the spectacle by heavy duty ball bearings and turn freely at highest speeds.

Heavy Construction plus machining of all parts to closest tolerances adds to Ideal's super smooth operation. Ideal not only introduced high speed drawing, but also solved the problems inherent in such speeds. Let us show you how today's Feathertouch Drafting will tremendously increase your production of highest quality sliver and give you longer frame life.

* Ideal Feathertouch Drafting is available on completely new Model 750 (two delivery) and Model 500 (four delivery) frames; and on new or rebuilt Model 250 frames. Generous trade-in allowances on your present frames.

Ideal Industries, Inc.
Bessemer City, N. C.

THE ORIGINATORS OF HIGH SPEED DRAWING



UNIONMATEX

Individual Machines and Complete Installations for the Textile Industry

MANUFACTURING PROGRAMME: **INGOLSTADT:** SPINNING MACHINERY FOR COTTON, WORSTED, ARTIFICIAL AND SYNTHETIC STAPLE FIBRES · **MAK:** CARD MATS · MAN-MADE SPINNERET PLATES AND SPECIAL SPINNERETS (SOLID AND HOLLOW) RING SPINNING FRAMES · MACHINES FOR THE MAKING, INSPECTING AND REPAIRING OF SPECIAL WEBS · **SCHLAFHORST:** MACHINES FOR PIRN AND CONE WINDING AND WINDING TO MAGAZINE AND SECTIONAL · **SUCKER:** SIZING MACHINES SIZE COOKING PLANTS · **THIES:** DYEING AND BLEACHING PLANTS · HIGH TEMPERATURE DYEING MACHINES FOR PIECE GOODS · **ASTRA:** WEAVING LOOMS FOR COTTON AND WOOLLEN GOODS · SPECIAL FABRICS · JACQUARD FABRICS AND PAPERMAKER FELTS · **KLEINEWEFERS:** CALENDERS · MANGLES · PRINTING MACHINES · MERCERIZING MACHINES · CONTINUOUS BLEACHING AND DYEING PLANTS · WASHING MACHINES · **MONFORTS:** FINISHING AND CLOTH ROOM MACHINERY FOR ALL KINDS OF FABRICS

UNIONMATEX TEXTILMASCHINEN-UNION GMBH · FRANKFURT AM MAIN · NEUE MAINZER STRASSE 22 · TELEPHONE: 23653/25168 · CABLE: UNIONMATEX · TELEPHONE: 041 2481

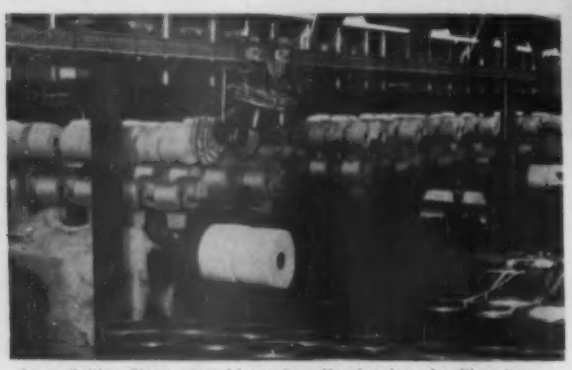
Now...keep your work areas clean automatically, with specially designed Amco Cleaners!

Amco has developed a wide selection of automatic cleaning equipment . . . designed to cut down manual cleaning, improve quality, and step up mill production.

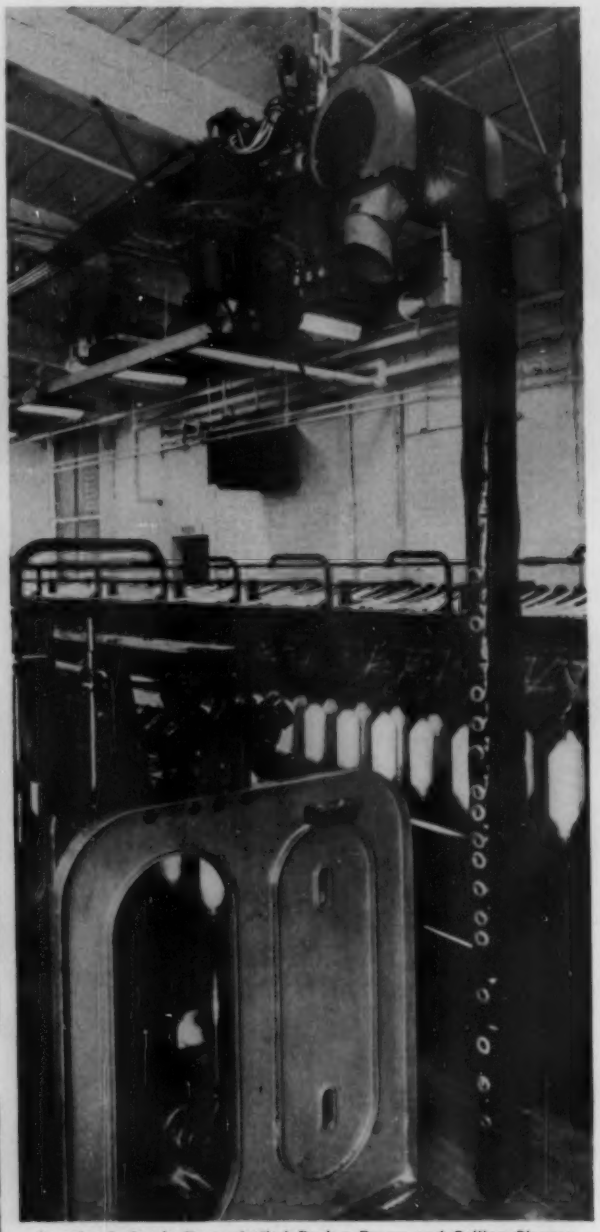
For money-saving facts about Amco Cleaners, call American Moistening Company — an organization with more than 70 years' experience serving the textile field.

Helicone Loom Cleaners improve quality of fabrics by preventing waste accumulation on stop motions, drop wires, harnesses and reed caps.

Amco Loom Cleaners over Draper shuttleless looms. Sheeting is being woven at high relative humidity.



Amco Ceiling Cleaner provides automatic cleaning of ceiling, beams, walls and other surfaces. Excellent for card room areas.



Amco's electronically controlled Roving Frame and Ceiling Cleaner. Air delivery boot takes care of specific lint-collecting trouble spots.

AMCO

SINCE 1888

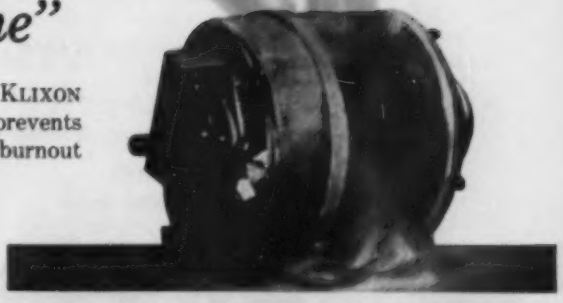
Air Conditioning Equipment — Textile Specialties

American Moistening Company, Cleveland, North Carolina

Branches: Atlanta, Ga., Providence, R. I., Toronto, Ont.

"For a few dollars more I could have Saved $1,000 in Down Time"

"A few dollars" is the approximate extra cost of a built-in KLIXON Protector for a 3-phase motor. A KLIXON Protector positively prevents motor burnouts due to the many causes of overheating. A motor burnout on a piece of production machinery due to these causes can be mighty costly, but it is one problem you won't have to worry about — if you *specify* and *use* 3-phase or single-phase KLIXON Protectors. Protected motors are available for 3-phase or single-phase operation from your motor supplier. Specify KLIXON protected motors on all your electric-powered machinery. Write for Bulletin SP-25.



PREVENT MOTOR BURNOUTS

SPECIFY KLIXON PROTECTORS

ON SINGLE- AND 3-PHASE MOTORS

TEXAS INSTRUMENTS
INCORPORATED
METALS & CONTROLS DIVISION
9511 FOREST STREET • ATTLEBORO, MASS.

CIRCLE 13 ON READER SERVICE CARD

All Pressure Regulators are not alike!

Norgren

Large effective Diaphragm area

provides closer pressure regulation

The extra-large effective diaphragm area in Norgren Pressure Regulators provides maximum sensitivity to fluctuating operating conditions.

Any slight deviation in regulated pressure, either as a result of fluctuating line pressure or varying flow demand, results in a greater total change in the force exerted by the diaphragm against the regulating spring. The valve immediately provides compensating action. This makes possible a highly uniform regulated pressure.

Regulator performance is better because a more stable regulated pressure is maintained over a wide range of operating circumstances.

The Norgren diaphragm is made of nylon-reinforced Buna N synthetic rubber, a combination that provides extra-long service, resulting in longer regulator life, more dependable operation and minimum maintenance.

Norgren Pressure Regulators give you these important features:

Balanced Valve Construction—improved regulator performance

Large Nylon-reinforced Buna N Synthetic Rubber Diaphragm—long service life

Baffle and Siphon Tube—increased accuracy

Large Passages and Valve Openings—large flow capacity

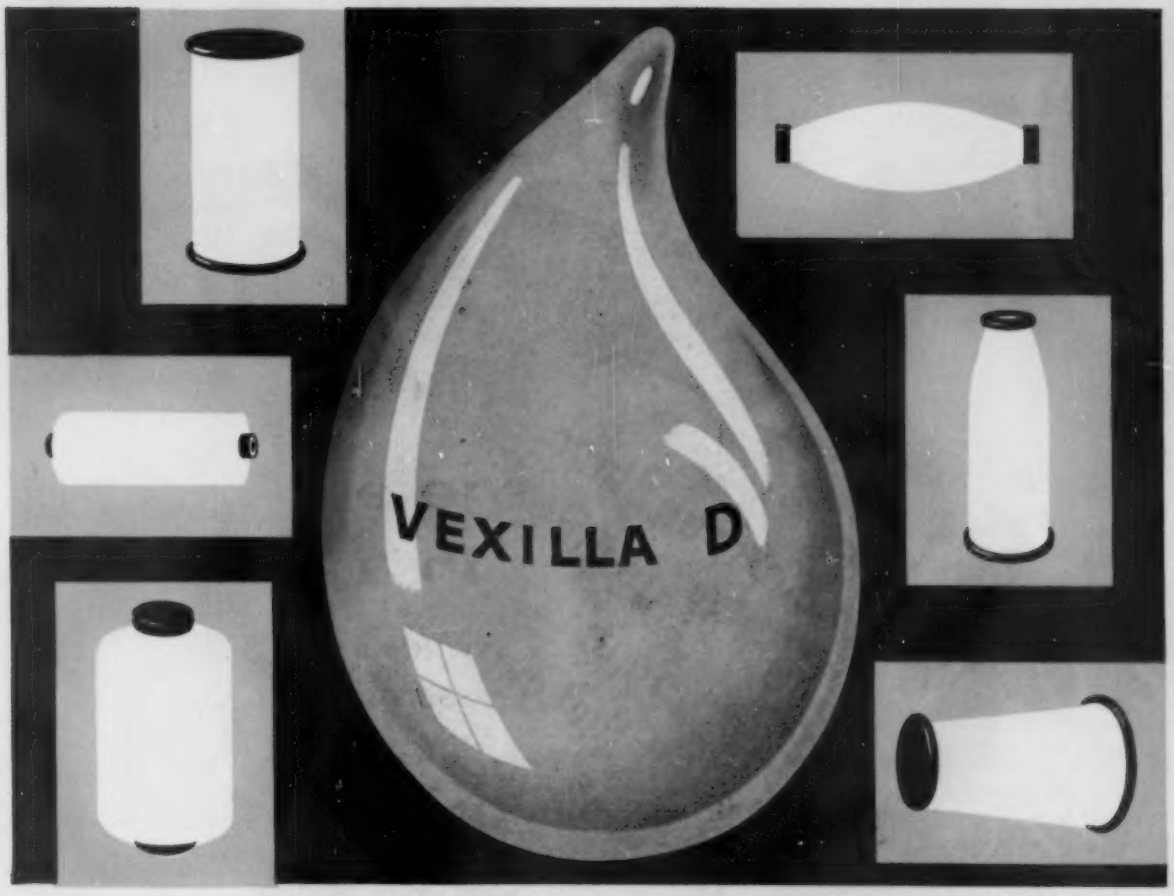
Easy servicing while still on air line

Flexible Valve Pin—assures better seating

For complete information on all your regulator needs, ⅛" to 2", call your nearby Norgren Representative listed in your telephone directory—or WRITE FACTORY FOR DESCRIPTIVE LITERATURE.

C. A. NORGREN CO. FOUNDED IN 1926

3404 SOUTH ELATI STREET • ENGLEWOOD, COLORADO



NEW *DISPERSANT* SPINDLE OILS

for COTTON—WOOL—SYNTHETICS

1. Increase Production. Shell Vexilla D Oils, because of their high film strength and lubricity, permit full-speed operation with heavy packages. They also insure complete lubrication protection to bearings, whether sleeve or anti-friction type.

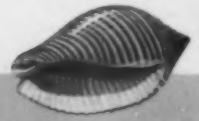
2. Improve Yarn Quality. Vexilla® D Oils will not thicken or gum up like ordinary oils. They constantly cushion spindles against vibration . . . eliminate hunting and logging . . . thereby reduce chafing and assure smoother, more uniformly twisted yarn.

3. Reduce Power Consumption. Vexilla D Oils lower frictional drag in both starting and running.

4. Reduce Spoilage. Vexilla D Oils will not atomize and fog-damage yarn on nearby spindles.

5. Increase Savings . . . especially when processing synthetic yarn. Since Vexilla D Oils have built-in emulsibility, any yarn stained during spinning and up-twisting can be salvaged.

Regardless of the spindles you use, you can expect improved performance with new Shell Vexilla D Oils. Ask the Shell Industrial Products Representative to assist you in selecting the proper grades for your plant. Or write for Technical Bulletin to Shell Oil Company, 50 West 50th Street, New York 20, New York. In Canada: Shell Oil Company of Canada, Limited, 505 University Avenue, Toronto 2, Ontario.



An interesting fact! Every Shell Branded Industrial Lubricant is named for a sea shell. Shown here is the Vexilla taeniata.

NEW

SHELL VEXILLA D OILS

. . . heavy-duty dispersant textile machine lubricants

SHELL

CIRCLE 15 ON READER SERVICE CARD

. . . and no C & K Loom part is designed, except to fit in most efficiently as part of the whole . . . only the maker of the whole loom has this point of view when designing and producing a loom part . . . it follows that a replacement part had best come from the loom maker, who has his own business at stake in the year after year efficient performance of his product.

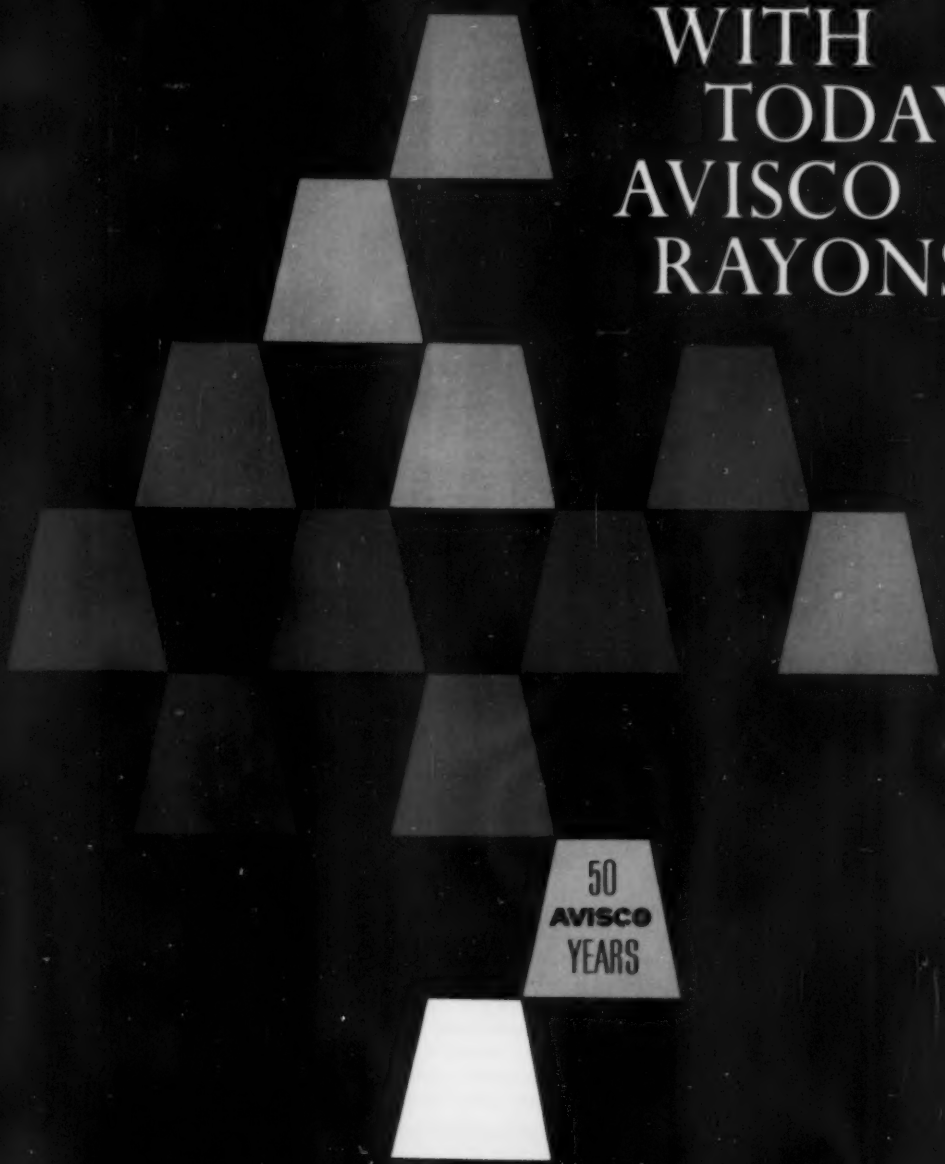
CROMPTON & KNOWLES CORPORATION, WORCESTER, MASS.
Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles, Jacquard Supply Co., Pawtucket, R. I. • Crompton & Knowles of Canada Limited, Montreal, Que.

Manufacturers of the world's Longest Line of Automatic Box Looms

CROMPTON & KNOWLES CORPORATION C&K WORCESTER, MASS. U.S.A.

FIFTY

OF PROGRESS WITH TODAY'S AVISCO RAYONS!



TEXTILE EXCITEMENT 1910 CREATED BY AMERICAN VISCOSE COMPANY

AVISCO

We have lots of experience in creating consumer excitement. Way back in 1910 when the first "artificial silk" fabrics (known to you as rayons) appeared in stores, they created a sensation. They were made of fibers produced by the American Viscose Company in the first successful synthetic fiber plant established in this country. A plant that was the forerunner of the whole synthetic fiber industry in the United States.

Early rayons had that silky look, were easy to dye and found ready acceptance in the millinery, lingerie and hosiery trades.

TEXTILE EXCITEMENT 1960 CREATED BY AMERICAN VISCOSE CORPORATION

Used alone or in blends, today's Avisco rayons make possible exciting new fabrics featured in all types of apparel. Avisco rayons give fashions the hand, color, texture and performance that means volume sales.

Creators of decorator fabrics, carpeting, bedspreads have woven magic around the home with today's Avisco rayon fibers. Soft and subtle or bold and dramatic, Avisco rayons achieve perfect results. The Avisco Integrity Tag on home furnishings fabrics symbolizes performance tested fabric quality.

With its 50 years of leadership in the synthetic fiber industry, American Viscose Corporation has set the pace in creating versatile, vital new rayon fibers whose application in the apparel and home furnishings fields are growing daily. New rayon fibers are constantly being developed and perfected in our own extensive research laboratories.

EVERYONE LOOKS TO TODAY'S AVISCO RAYONS FOR NEW IDEAS!

The new American Viscose rayons are "can do" fibers. American Viscose research and fabric development have created special rayons to meet the end use requirements of a multitude of textile products. Apparel, home furnishings, industrial fabrics look better, perform more efficiently when they feature the new Avisco rayon fibers. Used alone or in blends, Avisco rayons put the *sell* in fabrics.

THIS IS THE AVISCO FAMILY OF MODIFIED RAYON FIBERS:

AVRON® (XL) — The new high-strength rayon staple fiber. Its strength makes possible the spinning of a much finer yarn. Especially popular in home furnishings field; widely used in all types of apparel.

AVRIL® (Fiber 40) — The stable rayon staple fiber that can be pre-shrunk and processed on cotton equipment. Fast absorbing, it blends beautifully with cotton and synthetics.

AVLIN® (RD 100) — A brand new multicellular rayon staple fiber that has unique characteristics contributing new firmness and bulk to fabrics.

COLORSPUN* — Solution-dyed rayon staple fiber and filament yarns for fabrics that are exceptionally washable and colorfast. Colorspun fibers and yarns have many applications for both apparel and decorator fabrics.

AVICRON® — A crimped rayon filament extensively used for tufting and weaving. Extremely resistant to lint pick-up. Leading manufacturers of bedspreads, bath mats, rugs are consistent users of Avicron.

SUPER L® — Special long-wearing smooth staple rayon created for use in carpeting. Very soil resistant, frequently blended with natural and synthetic fibers.

* T.M. American Viscose Corporation

AMERICAN VISCOSE CORPORATION

Philadelphia 3, Pennsylvania • New York 1, New York

Makers of rayon filament and staple fiber, Tyrex tire yarn, cellophane, acetate yarns, cellulose bands & casings, plastics

Associated Companies (50% Owned): Chemstrand Corp. • Ketchikan Pulp Co. • AviSun Corp.

Index of Textile-Manufacturing Activity
(Man-hours worked, adjusted for changes in productivity. 1954=100)
1957
Jan. 108
Feb. 108
Mar. 107
Apr. 107
May 106
June 107
October Estimate 114
Source: McGraw-Hill Economics Department.
124 122 120 118 116 114 112 110 108 106 104 102 100 98 96 94
J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1957 1958 1959 1960

For 1961: A Promise

No matter how undistinguished present business conditions are, the textile industry has this consolation: The output of soft goods, such as mill products, normally dips only moderately when general business is sluggish, because purchases of soft goods are not so easy for the consumer to postpone as are purchases of long-life equipment.

At any rate, the generally lackluster state of business prevailing now is likely to continue until early next summer, when a decided upturn will set in. Gross National Product—the nation's total output of goods and services—will rise to $510-billion next year from $504-billion this year.

•

Between now and the business upswing next summer, the fortunes of various industries will vary widely. Production of all types of hard goods such as machinery and consumer appliances normally falls substantially when demand is poor.

•

Fast growing demand for textiles will help eradicate the dips in output and accentuate the gains. Big boost for all kinds of consumer textiles will come from the burgeoning 15- to 24-year age group, which is always a prime consuming group for textiles.

Figures of the Month

TEXTILE-INDUSTRY INDICATORS

	Latest Month	Previous Month	Year Ago
Textile World's Exclusive Index (chart above)	111.9	116.6	117.0
Employment (thousands)[1]	947.3	953.0	983.1
Production Workers (thousands)[1]	852.4	859.1	889.6
Weekly Earnings[1]	62.21	64.31	63.28
Hourly Earnings[1]	1.62	1.62	1.59
Weekly Hours Worked[1]	38.4	39.7	39.8
Production Index (1947-49=100)[2]	120	125	127
Wholesale Price Index (1947-49=100)[3]	95.9	96.1	95.9
Manufacturers' Sales (million $)[4]	1180*	1230	1250
Manufacturers' Inventories (million $)[4]	2690*	2690	2495
Inventories-to-Sales Ratio	2.23*	2.08	2.00
Exports (million $)[5]	67.1*	147.6	64.8
Imports (million $)[5]	125.9*	100.1	107.3
Stock Price Index (1941-43=10)[4]	26.10	27.70	31.77
Failures (number)[6]	4	3	5

NATIONAL ECONOMIC INDICATORS

Industrial Production (1947-49=100)[2]	162	165	157
Consumer Price Index (1947-49=100)[3]	126.2	126.2	125.2
Wholesale Price Index (1947-49=100)[3]	119.2	119.2	119.7
Civilian Population (millions)[2]	178.6	178.3	178.0
Unemployment (millions)[2]	3.4	3.8	3.2
Employment (millions)[2]	67.8	68.2	66.3
Personal Income (billion $)[3]	408.4	408.2	384.3

*August; otherwise latest month is September.

1. Bureau of Labor Statistics; 2. Federal Reserve Board; 3. Department of Commerce; 4. Standard & Poors; 5. Dun & Bradstreet; 6. Bureau of the Census.

NEWS and COMMENT. . . . . .

TEXTILE PRODUCERS ARE WORKING BOTH SIDES OF THE STREET THESE DAYS.

On one side, they are seeking ways to limit textile imports to this country. On the other, they are seeking to remove barriers to American textile products overseas.

The North Carolina Textile Manufacturers Association and the Northern Textile Association, meeting separately at the end of September, vowed to turn to Congress for relief that the Tariff Commission refused to grant in June. The northern group, meeting with the Wool Manufacturers Council, was unimpressed by Secretary of Commerce F. H. Mueller's suggestion that they make no plea to Congress but go back to the Tariff Commission on a different basis.

At the same time, British cotton textile manufacturers joined American textile owners in demanding a halt to disruption of domestic markets by imports from low-wage countries. They made their unanimity known at the annual conference of the International Federation of Cotton and Allied Textile Industries, meeting in The Netherlands late in September.

Elsewhere, in Washington, producers and exporters of yarns and fabrics met with Commerce Department officials to inquire what steps the government could take to expand American sales overseas. The meeting was one of a series the Department is having with various industries.

WHILE THE INDUSTRY CONTINUES TO FIGHT IMPORTS, MILL EARNINGS REMAIN STRONG.

Indian Head Mills for the nine months ended August 27 reported sales of $50,555,061 (against $40,931,893 in the same period last year) and net operating profit of $2,028,271 (against $1,824,877).
Reeves Bros., Inc., for the fiscal year ended July 2 reported sales of $71,718,458 and net earnings of $2,262,016 (compared with $62,042,518 and $974,843).
Stonecutter Mills Corp. for the fiscal year ended June 30 reported net profit of $663,930 (compared with $533,199 a year earlier).
Kayser-Roth Corp. for the year ended June 30 reported net profit of $5,599,277 (against $4,192,321 a year ago). Directors voted the regular 10¢ quarterly dividend plus an extra 2% stock dividend.
Joseph Bancroft & Sons Co. for the fiscal year ended June 30 reported net sales and operating revenue of $28,008,565 and net income of $1,112,105 (up from $1,055,636 a year earlier). President W. R. MacIntyre cited capital expenditures of $988,000 for the year, nearly half of it earmarked for research and development.
The Kendall Co. for the first 36 weeks of 1960 reported sales of $76,804,000 (against $77,265,000 for the same period a year ago) and after-tax net earnings of $3,320,000 (against $3,528,000). Set-aside for taxes this year is substantially higher than it was last year.
West Point Mfg. Co. for the fiscal year ended August 27 reported net sales of $156,920,784 (against $145,619,052 a year ago) and net profit of $8,173,465 (against $6,032,376).

• • • ...BUT THE FIBER-PRODUCING INDUSTRY SHOWS LESS VIGOR.

The Industrial Rayon Corp. for the nine months ended September 30 reported a net loss of $2,403,672 on sales of $36,062,140 (compared with a profit of $921,674 on sales of $48,556,524 a year earlier).
Chemstrand Corp. for the first nine months of 1960 reported sales of $152,844,000 and earnings of $19,316,000 (against $154,915,000 and $20,893,000 in the same period a year ago).
American Enka Co. for the first 24 weeks of 1960 reported net income of $683,000 (compared to $3,484,000 a year earlier).

SUPPLIERS AND EQUIPMENT MAKERS SHARE THE TEXTILE INDUSTRY'S STRENGTH.

Carrier Air Conditioning Co. reports textile-industry sales up nearly five-fold in the first half of 1960 over the same period last year.
Leesona Corp. reports a drop in its order backlog. Even so, with 85% of volume going to the textile industry, President Robert Leeson says sales for 1960 should be higher than the $24,900,000 in 1959.
Warner & Swasey by year's end will have shipped about $5-million in textile machinery - an increase of about $1-million over 1959.
National Starch & Chemical Corp. for the first nine months of 1960 reports sales of $41,091,152 and earnings of $2,362,074 (against $39,224,985 and $2,287,894 a year earlier).

OVERSEAS, ACTIVITY CONTINUES AT A FAST CLIP.

From the International Federation of Cotton and Allied Textile Industries, Paul Catz, TW's Amsterdam newsman, cites a report on the swift pace of mechanization in the four-year period 1956-1959. In that period mechanization in the Dutch cotton industry increased from 29% to 44%; France, from 52 to 54%; West Germany, 39 to 51%; Italy, 67 to 73%.
From London TW's news bureau reports United Kingdom output of man-made fibers in August totaled 43.18-million pounds (39.66-million pounds in August 1959). The August 1960 figure is the highest ever recorded for this month. Even so, it is the smallest monthly total for this year. Total production for the first eight months of 1960 is 395.16-million pounds against 325.3-million in the first eight months of 1959.
The Russians are dangling a 20-year trade plan before some capitalist nations, says Ernest Conine, TW's man in Moscow. Soviet officials held out such a prospect not long ago to visiting British officials. More recently they have offered the same prospect to 73 visiting Japanese, citing the possibility that Russia would buy textile machinery and other equipment from Japan. Anastas Mikoyan, top Soviet trade official, bluntly told the Japanese, "We do not want the Japanese economy to be tied up with the American market alone, which could make you dependent on the United States."
West Germany exported $500-million of textiles in 1959 -- an increase of 14.6% over 1958 -- according to the annual report of the West German Textile Industry. Sales in the industry totaled about $4-billion, up 5.2% above 1958. Meanwhile, the West German Machine Industry Association predicted sales of some $238-million for 1960, up substantially over 1958 and 1957. Order books are now filled up to 10 months. The association points out that West Germany is now the world's No. 1 supplier of textile machinery.

WASHINGTON OUTLOOK . . . . .

With a leading domestic textile-industry economist sharply dissenting, top private business economists agree with administration forecasts for at least a 10% rise in gross national product for 1961.

The views, traditionally stamped not for direct quotation or attribution, came as part of the Administration's Business Advisory Council meetings with industry economists in Washington.

The textile-industry spokesman, however, disagreed. He predicted a much sharper dip in the U. S. economy during the first half of next year than seen by his colleagues in such industries as steel, automobiles, food processing, construction, machinery, manufacturing chemicals, and so on.

*

Government and industry economists agreed that this year's GNP would reach about $505-billion, over the $482-billion totaled last year. The consensus indicated a level or modest decline for the first half of next year, followed by a steep rise in the second half of 1961.

*

Textile-mill spokesmen are stepping up their pressure on the government to come up with new help in selling more U. S. textile products overseas and tightening curbs against competing imports from abroad.

But they are not making much headway with officials. And last month, their arguments were refuted by leading manufacturers of textile machinery and equipment.

Domestic mills have been basing their case for more trade protection and government assistance in export promotion on grounds that the industry is slumping at home. But textile machinery and equipment exhibitors at the Southern Textile Exposition in Greenville, S. C., expressed the consensus that any domestic textile industry slow-down is temporary and likely to be short-lived.

The equipment makers reported that orders for modernized machines is "terrific."

Earlier, Commerce Secretary Frederick H. Mueller bluntly told a New Hampshire Northern Textile Association meeting that "no current domestic problem could approach the magnitude of the cost to business in financing fortress America with only a few surviving allies, should Communism burst the banks and flood the world."

*

U. S. officials have been lauding foreign removals and relaxations of discriminatory import barriers. Some Commerce Department staffers have charged that U. S. textile producers have failed to take advantage of new export opportunities that they claim are opening up. Textile exports, nevertheless, have accounted for a substantial part of recent U. S. total export gains, Commerce Department officials report, particularly to the United Kingdom, which has liberalized textile-import rules and regulations.

the FIBER PRODUCER'S dilemma
(audio) Fiber producers live in a world of . . .
FP
(audio) . . . pressure vessels
(audio) . . . piping
FP
(audio) . . . pumps
(audio) . . . and gloop
(audio) Their process is top secret
(audio) They need a working partner
(audio) . . . to design and build equipment
(audio) . . . to develop a pilot plant
(audio) And most important: Someone they can trust
(audio) America's leading fiber producers
LADY
TIGER
(audio) . . . have solved this dilemma
BUTTERWORTH
(audio) . . . at Butterworth
(audio) . . . world's largest independent manufacturer
(audio) . . . of synthetic fiber machinery
FP
B
(audio) . . . now, everybody is happy

BUTTERWORTH . . . machine builder extraordinary

H. W. BUTTERWORTH & SONS COMPANY
Division of Van Norman Industries, Inc.
BETHAYRES, PA. • SINCE 1820

VN

In the South: Industrial Heat Engineering Co., Greenville, S. C.
In the North: United States Supply Co., E. Providence, R. I.

FIVE NEW

LANAMID® DYES

. . . new tools to use when you need the fastness, quick-drawing and level-dyeing characteristics of neutral, premetallized types

Here are five new dyes that greatly extend the range of shades you can produce with the versatile Lanamids.

With all the well-known advantages of this superior class of dyestuffs for wool, nylon and modified acrylics, these new Lanamids are applied in a neutral or weakly acid bath without prolonged high-temperature processing.

Fine wool fabrics are dyed with minimum impairment of their natural qualities. Hand is improved and special weaving effects such as friezes and boucles are preserved.

Although they exhaust rapidly, Lanamids build up evenly from the initial strike. Dyeings on wool piece goods are extremely level. Varying grades of wool dye uniformly without tippy, heathery or skittery effects.

Lanamids are highly recommended for carpet wools, wool blends and unions, continuous raw stock dyeing and nylon upholstery fabrics.

High average fastness, similar working properties and remarkable reproducibility simplify use of Lanamids in combinations, especially in difficult mode shades.

Your National Aniline representative will gladly provide samples of the Lanamid Dyes.

Five new Lanamid Dyes illustrated, left to right:

LANAMID SCARLET G LANAMID VIOLET 2BL LANAMID RED GL LANAMID GRAY GBL LANAMID BORDEAUX BL

Allied Chemical

NATIONAL ANILINE DIVISION

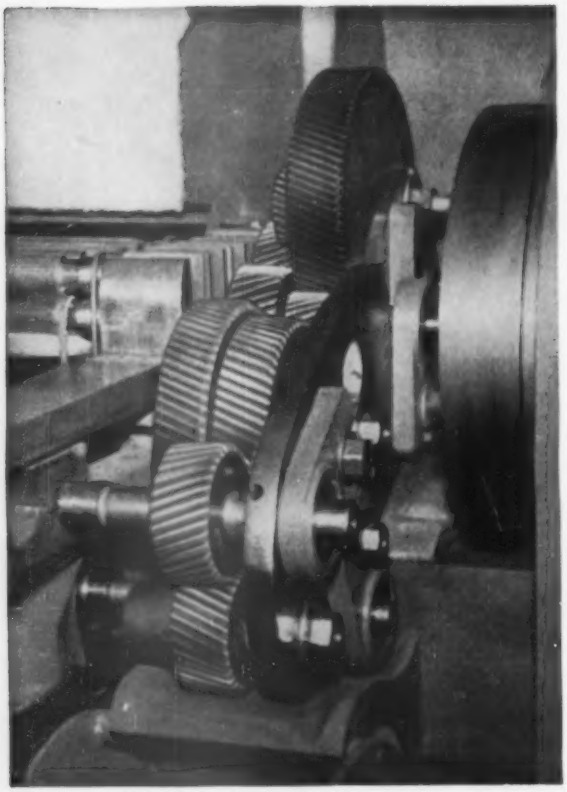
40 Rector Street, New York 6, N. Y.

Atlanta Boston Charlotte Chicago Dallas Greensboro
Los Angeles Philadelphia Portland, Ore. Providence San Francisco

In Canada: ALLIED CHEMICAL CANADA, LTD.,
1410 City Councillors St., Montreal 2 100 North Queen St., Toronto 18

Distributors throughout the world. For information:
ALLIED CHEMICAL INTERNATIONAL • 40 Rector St., New York 6, N. Y.

Put strength, long life, silence into gears, couplings, loom parts with C D F Celoron® plastic



CELORON-TO-CELORON GEARS in drawing rolls made by Ideal Industries, Inc., Bessemer City, N. C. These are helical-cut gears—the toughest to machine, requiring the toughest material. Celoron is it. Other Celoron parts for this application are shown below, top right.

WORK MIRACLES IN TEXTILE MACHINERY—with this amazing golden plastic material! Celoron gears help eliminate noise, reduce wear on mating metal gears; and even the roughest-used helicals last . . . and last . . . and last.

HIGH MECHANICAL STRENGTH. Typical Celoron strengths. tensile, 6,500 psi; flexural, 10,000 psi; compressive, 25,000 psi; shear, 8,500 psi. Dimensionally stable and readily machined, Celoron fills the bill where costly metal parts fail.

ELECTRICAL INSULATION VALUE. Celoron is a non-conductor with high electrical insulation value. It makes ideal mechanical-electrical parts. Celoron couplings effectively insulate motors from driven machinery.

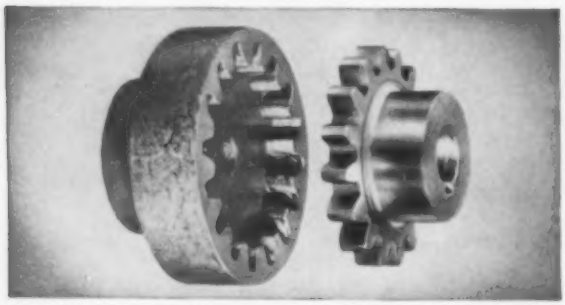
BETTER SERVICE. Your CDF Sales Representative is one of a corps of trained, experienced sales engineers CDF maintains across the country. Thoroughly familiar with most textile industry requirements, he can specify the plastic material that's best for your specific application. His recommendation will be backed by the widest line of industrial plastics now available—plus CDF's extensive manufacturing, engineering and research facilities. Contact him soon, or if you prefer, write directly to our home office.

Keep in close touch with *your* C-D-F sales engineer—a good man to know!

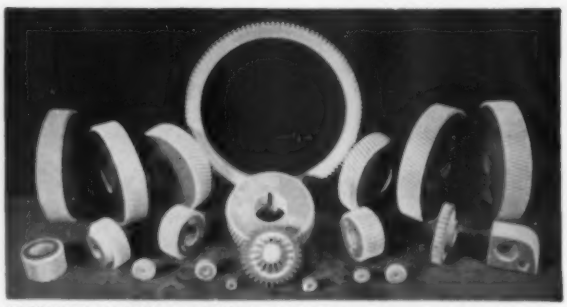
CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE Bakelite COMPANY • NEWARK 55, DEL.

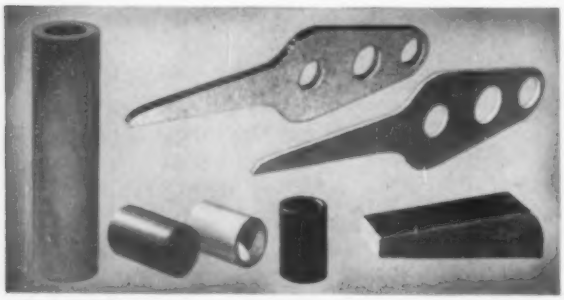
In Canada: 46 Hollinger Road, Toronto 16, Ont.



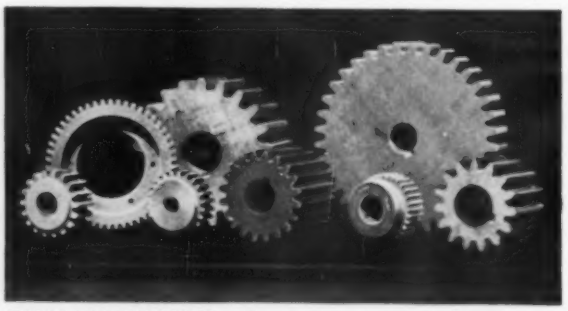
LOW-COST, EASILY-ASSEMBLED C-D-F Celoron flexible coupling transmits power smoothly, efficiently, silently . . . needs no lubrication, works on vertical or horizontal shafts.



PRECISELY MACHINED KEYWAYS help keep these Celoron parts silent and strong in the Ideal drawing rolls illustrated in top photograph. Note wide range of sizes and shapes.



YEARS OF SERVICE, freedom from maintenance, resistance to moisture—that's what these C-D-F parallel plugs, knife guides, binder bushings give the mill operator.



STRONG, SILENT CELORON makes both drive and driven gears. Metal gears don't develop excess play, last longer when they mate with Celoron. Many applications are 100% Celoron-geared.

Every feature works in your favor...dollar-wise

Here's how you benefit:

- no costly apparatus houses
- low operating and installation costs
- light weight permits ceiling suspension
- complete flexibility meets present and future needs
- provides all or any air conditioning combination such as humidifying, ventilating, heating, filtering, dehumidifying, evaporative or refrigerative cooling

Humiduct is an exclusive Bahnson design. A space saving, unit type system, it offers highest air conditioning efficiency at lowest cost.

Optional Easy-Flo Filters are economical air filters designed to prevent lint accumulation in the air conditioning equipment, thus reducing costly cleaning operations and providing more efficient air handling.

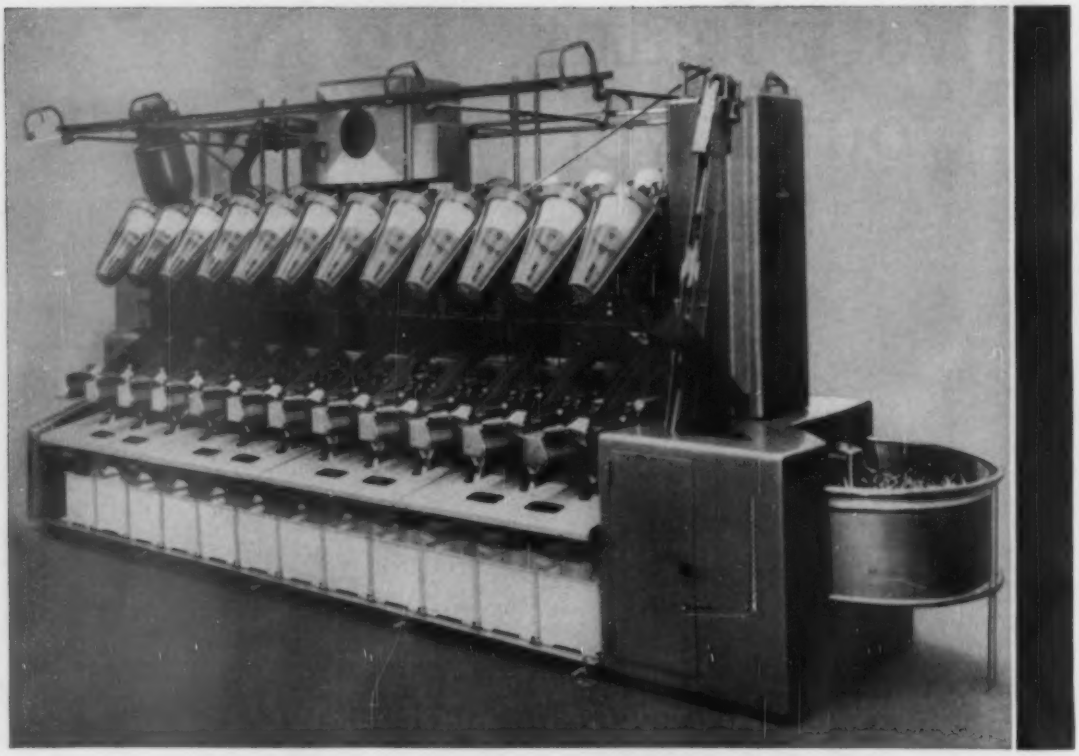
Clip coupon to letterhead. Mail today for FREE ILLUSTRATED BULLETINS—Bulletin 4A-Humiducts; Bulletin 27A-Easy-Flo Filters.

NAME_____

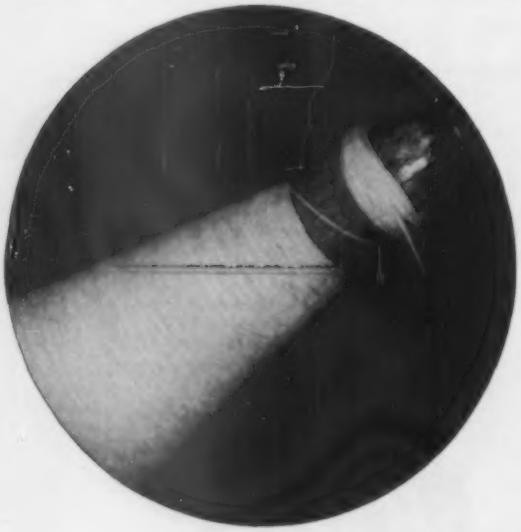
Bahnson

AIR-O-MATION

THE BAHNSON COMPANY • WINSTON-SALEM, N. C.



SCHWEITER Automatic Filling Winder with the new parallel bobbin arrangement for the filling of all types of loom batteries

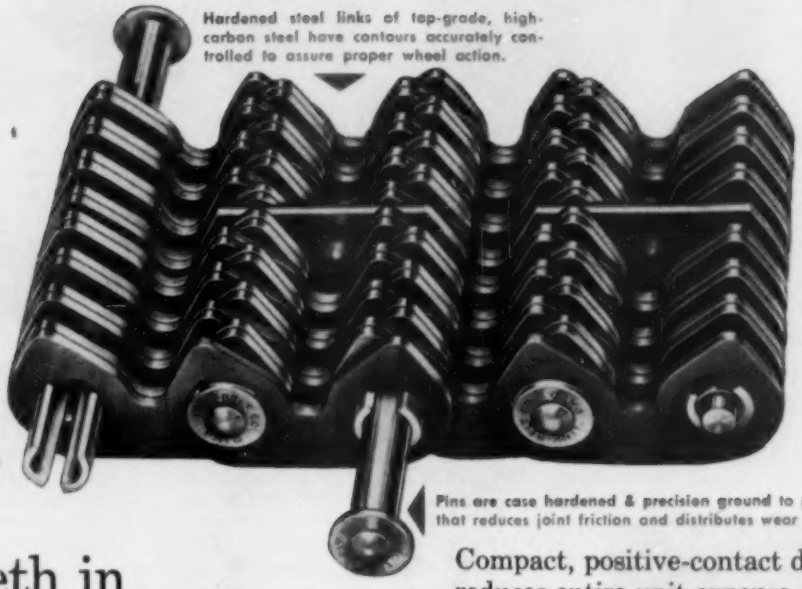


Our latest model
Automatic Filling Winder,
type MSL:

- with Dust Exhaust system
- with Parallel Bobbin arrangement – regular, or double size, boxes can be used
- equipped with ROTOR – for building Tailless Bobbins
- with, or without, Interlocking Tip Bunch for Automatic Loom Box loading

SCHWEITER LTD.
HORGEN (Zurich) Switzerland

Exclusive agents for U.S.A. and Canada
H. J. THEILER CORPORATION, *Whitinsville, Mass.*



Hardened steel links of top-grade, high-carbon steel have contours accurately controlled to assure proper wheel action.

Bushings of specially selected steel are case hardened to take joint wear and prevent elongation of link hole.

Pins are case hardened & precision ground to permit free rotation that reduces joint friction and distributes wear over entire surface.

The teeth in Link-Belt silent chain put the bite on drive costs

Compact, positive-contact design reduces entire unit expense

There are big savings to be found by switching to modern, versatile Link-Belt silent chain drives. Smooth, positive engagement prevents slippage, eliminating wasted horsepower. Long life—continuous operation with minimum maintenance for many years is common—keeps production costs down.

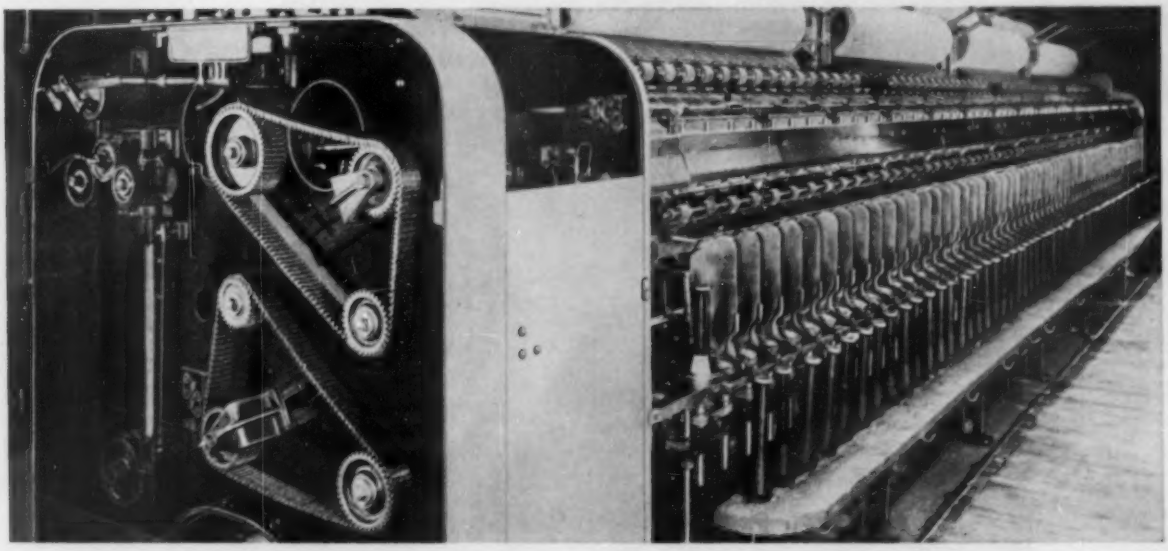
Now consider these additional advantages: dependable operation under extremes of temperature and humidity; easy assembly in tight spaces, permitting built-in drives, compact housings; space saving and efficiency on extremely short centers at ratios as high as 10-to-1.

Link-Belt silent chain is available in a full range of types and sizes for either large or fractional-horsepower drives. For full details, call your nearby Link-Belt office or authorized stock-carrying distributor. Look under CHAINS in the yellow pages of your phone book. Ask for Book 2425.

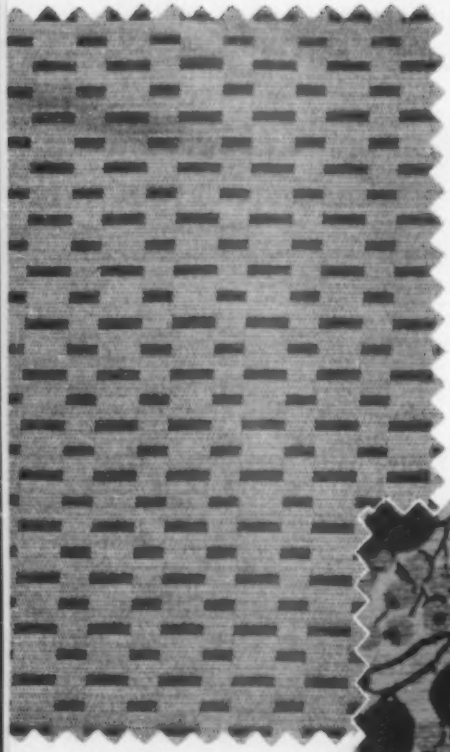
LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Warehouses, District Sales Offices and Stock Carrying Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs. Representatives Throughout the World. 11,040-A



Variety's
your challenge.....



Tomorrow's markets will belong to the mills that have prepared for them today. UNIFIL® Loom Winders are giving modern mills a market-oriented advantage.

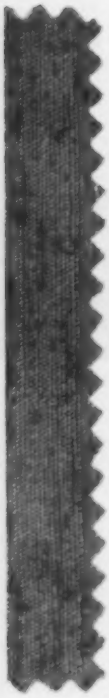
UNIFIL Loom Winders enable weave rooms to use a wide variety of filling yarns; natural and man-made; spun, filament and textured. The single shuttle weave room can switch filling yarns from one count to another, from one fabric to another as quickly as fashion trends change — *and at no extra cost.*

While insuring against market demand variances, UNIFIL Loom Winders drastically reduce inventory and production planning, work scheduling and employee training. These savings and the inherent operating economies of UNIFIL are the major factors in purchasing decisions.

UNIFIL's unmatched versatility meets today's needs and tomorrow's markets. It allows mills to wind from any filling supply *economically*. Quills are wound and shuttles loaded, empty quills stripped and returned for rewinding — *all automatically at the loom!*

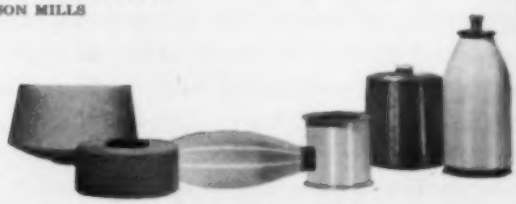
Investigate UNIFIL for greater versatility and economy. Learn the reasons why leading textile mills consistently reorder UNIFIL Loom Winders. Call your nearest Leesona Sales Engineer — in Boston, Philadelphia, Charlotte, Atlanta or Los Angeles. Or write LEESONA CORPORATION, P. O. Box 1605, Providence 1, Rhode Island. Keep pace with your market with UNIFIL.

..... meet it with *Versatility!*



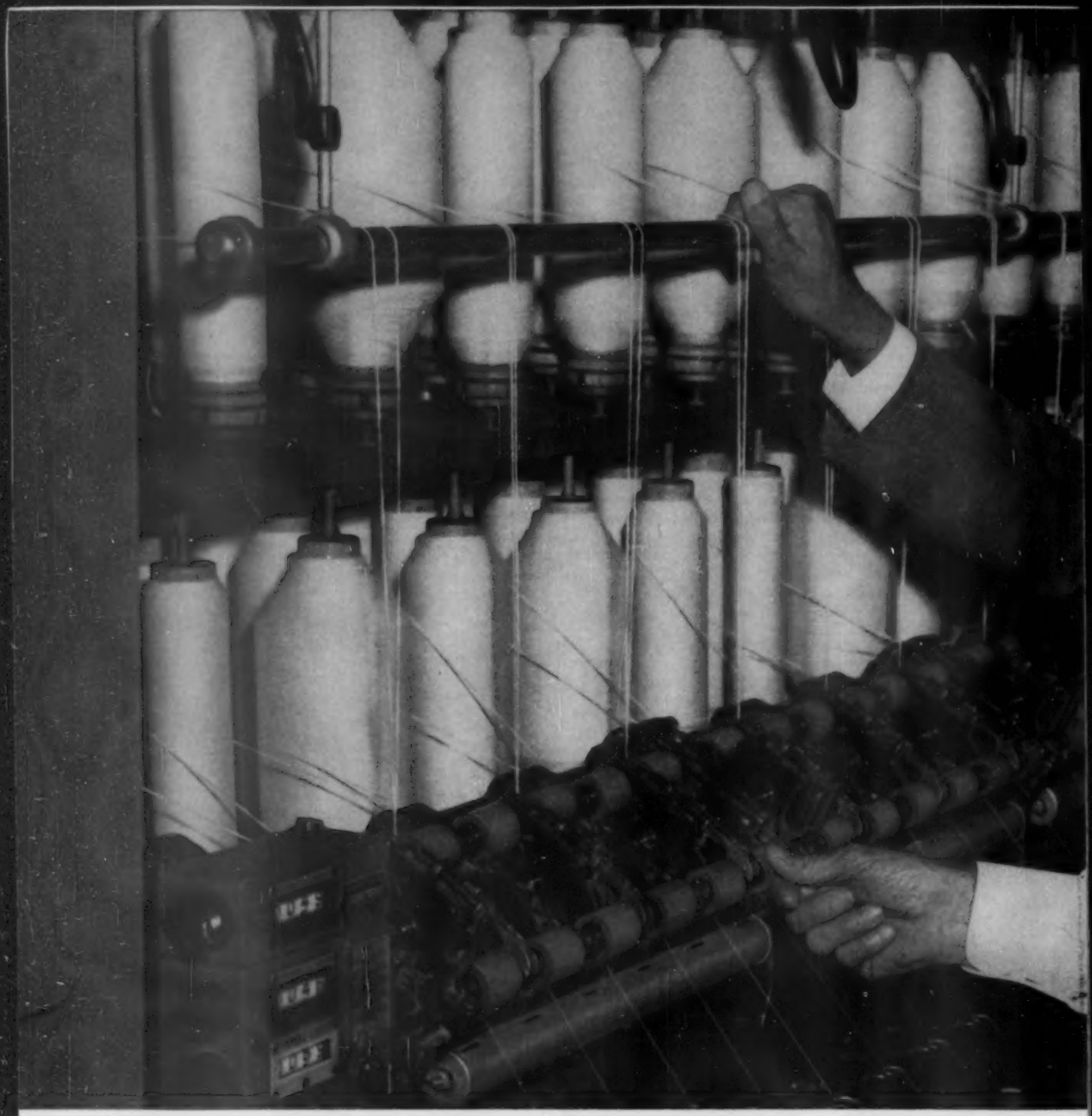
Some of the many modern mills that are meeting today's challenges with **UNIFIL** *Loom Winders*

ABDON TEXTILES, INC.
ABNEY MILLS
AMEROTRON COMPANY
BEMIS BRO. BAG CO.
BERKSHIRE HATHAWAY, INC.
BERNSON SILK MILLS
BLOOMSBURG MILLS, INC.
BRUCK MILLS, LTD.
BURLINGTON INDUSTRIES, INC.
CADILLAC TEXTILES, INC.
CANNON MILLS CO.
CHRYSLER MILLS, INC.
CLINTON SILK MILL
CONE MILLS CORP.
DOVER MILL group
ERLANGER MILLS, INC.
GERRISH-MILLIKEN MILL
GREENWOOD MILLS
M. HAUSMAN & SONS
FRANK IX & SONS
JAUNTY FABRICS CORP.
JUDSON MILLS
KALCO WEAVING CORP.
KINGSLEY MILL CORP.
LAURENS MILLS
M. LOWENSTEIN & SONS, INC.
LYNN TEXTILE MILLS, INC.
MARION MFG. CO.
PANSY WEAVING MILLS
PEPPERTON COTTON MILLS
PONEMAH MILLS
REEVES BROTHERS
RIEGEL MILLS, INC.
SCHNEIDER MILLS
SHELBY MILLS, INC.
SPARTAN MILLS
STANWOOD MILLS, INC.
J. P. STEVENS & CO.
STRASBURG TEXTILE MILLS
TALLASSEE MILLS
UNITED MERCHANTS & MANUFACTURERS, INC.
WOODSIDE MILLS



CIRCLE 33 ON READER SERVICE CARD

23.0.33



For best performance on any frame . . .

When selecting spinning cots, mill men are guided by a single consideration: Which type will turn out maximum production of high-quality yarn? There is no one answer to that question . . . because there is no one cot material that will perform equally well with every possible combination of frame and fiber. • In the broad line of Accotex Cots, however, there are materials that will give good performance with any fiber or blend, and on any spinning system. • Where a high front-roll lap-up rate is reducing production, J-490 Cots or one of the new anti-static Accotex materials will help control it. If excessive eyebrows are causing yarn irregularities or too many ends down, Accotex NC-762 will keep

Stanley H. Frary, Superintendent of the King Philip Div. Plant D of Berkshire Hathaway, Inc., at Warren, Rhode Island, discusses yarn quality with Armstrong representative Guy Baer.

Armstrong Accotex Cots

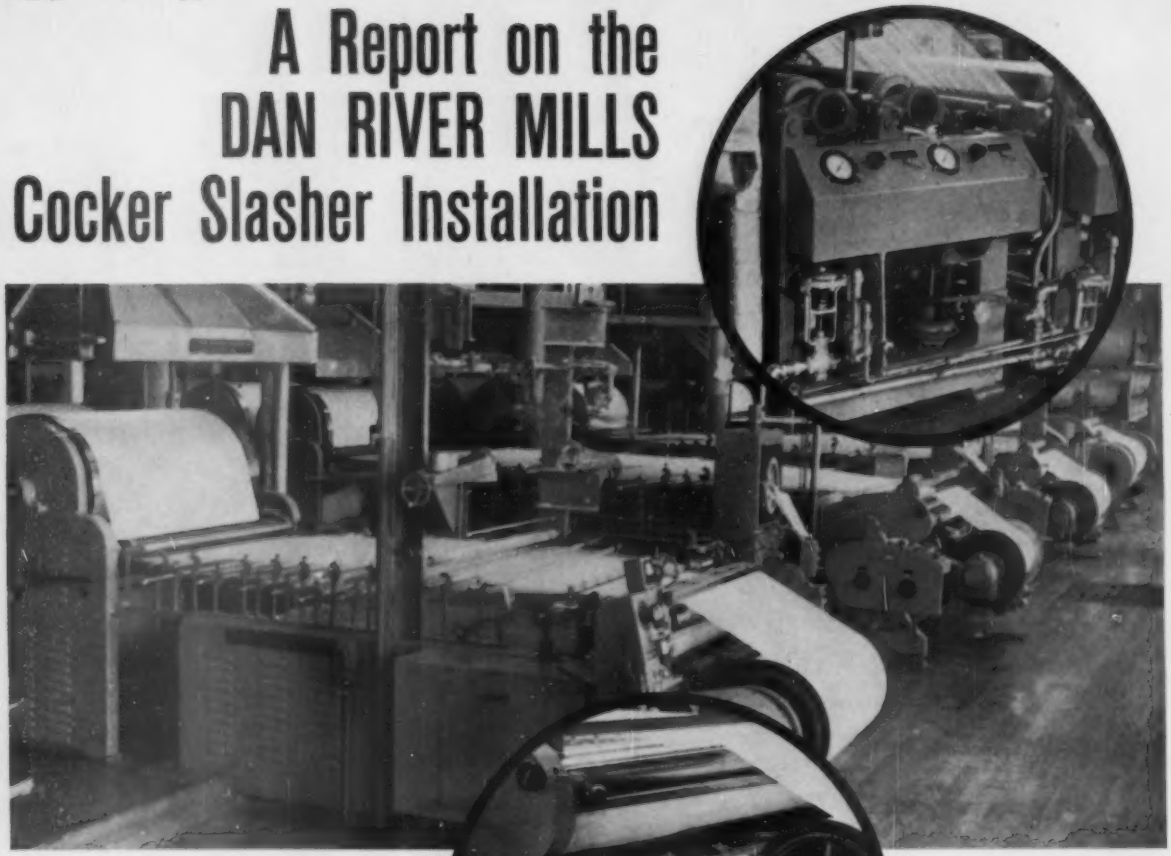
them at a minimum. And there are soft cots in the Accotex line which will provide better yarn control and increased break-factor on certain frames. • Your Armstrong man can help you with virtually any roll covering problem. His specialized training and wide experience provide answers that can be depended on. Call him or write to Armstrong Cork Company, Industrial Division, 6511 Dauphin Street, Lancaster, Pennsylvania.

Armstrong ACCOTEX COTS

1860-1960 Beginning our second century of progress

CIRCLE 35 ON READER SERVICE CARD

A Report on the DAN RIVER MILLS Cocker Slasher Installation



In 1959, Dan River Mills integrated their slasher operations as shown in the picture above. These four machines (2 GH and 2 1954 models) have replaced eight other slashers of varying types and ages.

These four Cocker Slashers easily carry a load of 2547 looms, running everything from prints to fancies and stripes—yarn counts 20s to 50s—and from 4700 ends 32/1 to 9540 ends 32/1.

Minimum Loom Beam Width
50 Inches

Maximum Loom Beam Width
107¾ Inches

Maximum Loom Beam Head Diameter
32 Inches

- Large picture shows modern Slasher Room at Dan River Mills, Inc.
- (above) Control panel on double size box gives quick direct readings. Air motors assure precise and even loading of top rolls.
- (left) This view shows the revolutionary Cocker Torque Tube Drive and convenient control panel.

Speeds . . .

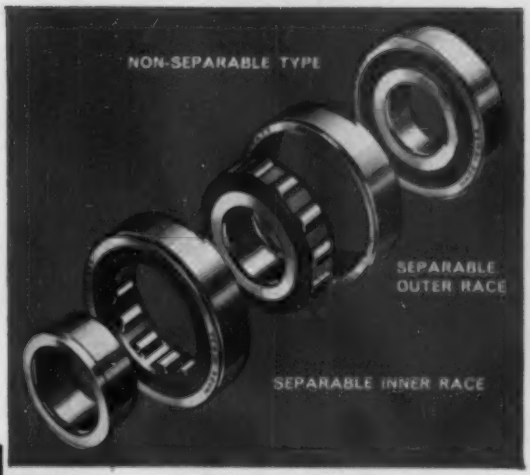
Dye Beams up to 150 ypm
Stripes up to 150 ypm
4770 ends 32/1—150 ypm
9540 ends 32/1—79 ypm
Top Operating Speed—150 ypm
Heaviest Production set—79 ypm
Average Production operating on 120 hours per week on shift for shift basis—69,716 lbs. per slasher.

Write for Full Information

COCKER MACHINE & FOUNDRY COMPANY

IN CANADA:	IN MEXICO:	PLANT & OFFICES	WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT
Contact W. S. Clark Montreal, Canada Oxford 7-2242	Ing. J. Via, Jr. I. La Catolica 45-311 Mexico, D. F.	at Ranlo, N. C. MAILING ADDRESS: Gastonia, N. C.	

YOU GET FIVE
IMPORTANT BENEFITS
WHEN YOUR "SPECS"
READ **HYATT**



RELIABILITY

Hyatt reliability is measured by results. For example, The Hyatt Reliability Program embraces every phase of product development. In procurement, it weeds out all but the highest-grade raw material. In engineering, Hyatt Reliability insures efficient, accurate design. In manufacturing, it provides careful inspection and rigid adherence to specifications. And Hyatt Reliability does not stop there. Hyatt sales engineers work with you to help recommend the best possible bearing for your requirements. Then, they follow up to make sure Hyatt bearings deliver in service. And no one knows more about cylindrical bearings. For over 68 years, Hyatt has produced top-quality bearings for almost every type of application. Check the benefits that are yours when your "specs" read Hyatt.

2

PRICE. Hyatt's advantages of quality, assembly practice and uniformity of product can often reduce over-all cost to you.

3

DELIVERY. Hyatt's unsurpassed production facilities deliver bearings in quantity with maximum speed and economy.

4

ENGINEERING. Hyatt's engineering is backed by the extensive research and engineering facilities of General Motors.

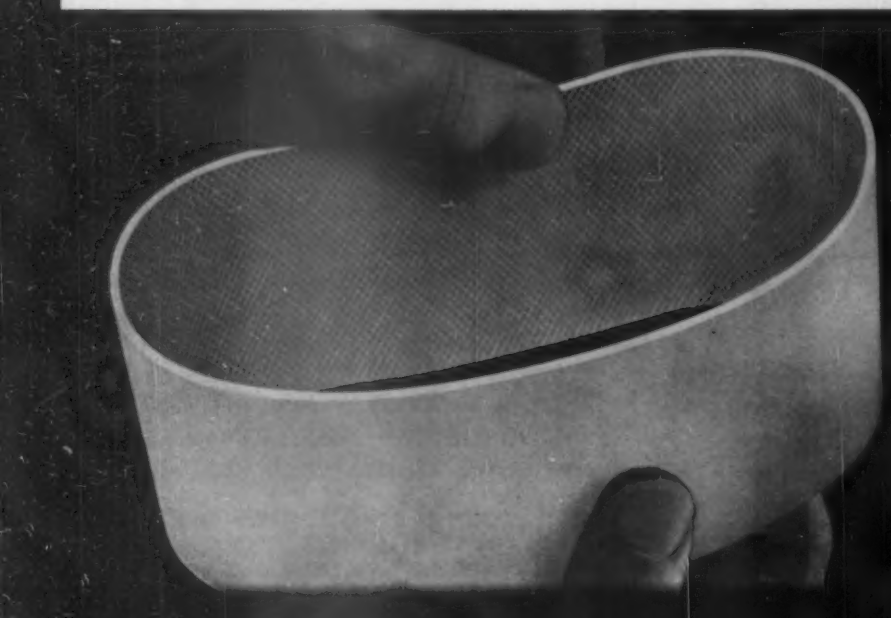
5

SERVICE. Hyatt Sales Engineers are trained bearings specialists who can save you man-hours and dollars.

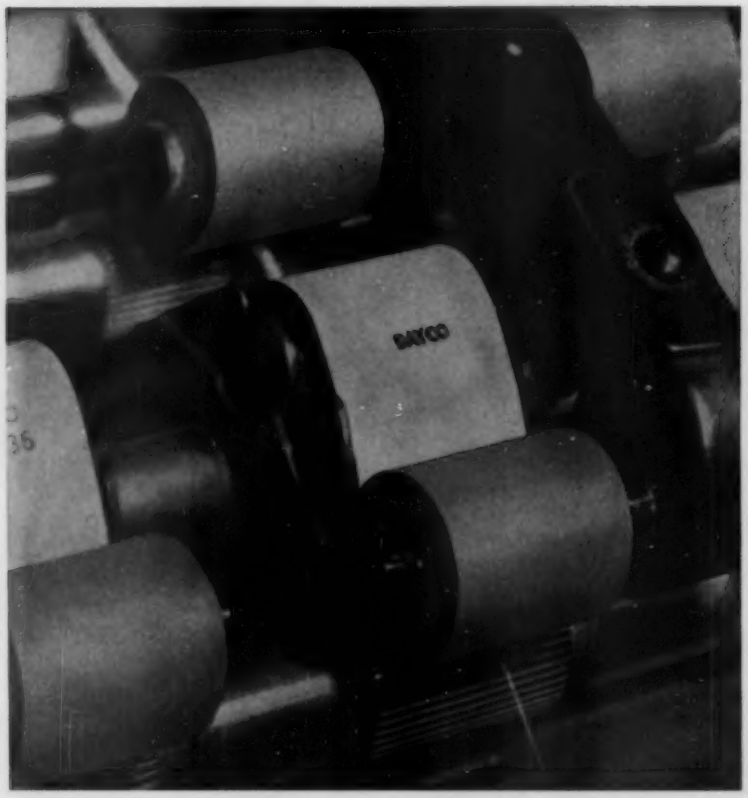
HYATT *HY-ROLL BEARINGS*
FOR MODERN INDUSTRY

HYATT BEARINGS DIVISION, GENERAL MOTORS CORPORATION, HARRISON, N. J.

ACTUAL WORKING MODEL of long-apron system shows: (A) Patented embossed surface for precise coefficient of friction and abrasion-resistance formulated to last for years: (B) Unmatched flexibility at nose-bar for consistently smoother performance and top quality yarn: (C) Guaranteed yarn control due to a cleaner spinning outside surface.



EXCLUSIVE . . . patented by Dayco . . . your only source for this important friction-right improvement in aprons that made possible lower power and increased production. It's another example of Dayco's continuous research program to increase economies and production.



A COT FOR EVERY PURPOSE—as well as a virtually all-purpose cot! That's the great Dayco story to meet every need for surface texture, densities, dimensions, sizes, kinds. Whether man-made fibers or mixtures are your spinning problem, Dayco research in the laboratory and in the field guarantees consistently better results and greater savings.

NEW RECORD-BREAKING SPIN-AND-WEAR PERFORMANCE

with Dayco on any apron system

For super-quality yarn—consistently, month after month—nothing matches Dayco's patented Embossed Apron for long-apron systems. Here's super-smooth drafting action—unequalled flexibility and precision friction surfaces on both sides to meet any and all conditions.

No more tucking or jamming at the nose-bar . . . no more ozone breakdown . . . no more abrasive problems for months and months.

Improve your yarn quality . . . up your spinning performance with the pioneer and leader in the field —Dayco!

Ask your Dayco Representative to set up a trial installation. Phone or write Dayco Textile Products Co. (Formerly Dayton Rubber Co., Textile Division) 401 S. C. National Bank Bldg., Greenville, S. C.

Dayco TEXTILE PRODUCTS CO.

Division of Dayco Corporation

OVERSEAS PLANT: THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

Dayco All-Purpose Cots exceed 300,000 spindle-years WITHOUT REBUFFING

300,000 spindle years without the need of the usual periodic buffing! That's the 2½ year record from just one 120,000 spindle plant using Dayco's ALL-PURPOSE SG-60 cots.

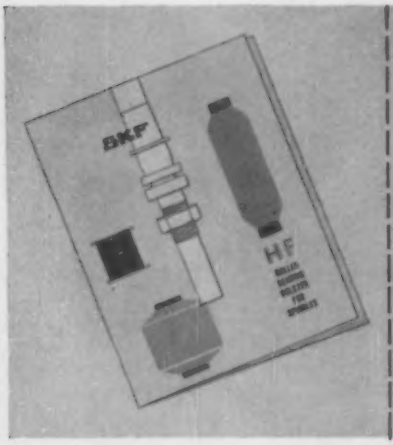
Add to this amazing wear record the great volume of high-quality yarn coming off the production line and you can see the outstanding efficiency of the versatile SG-60.

But with more than 70 different fibre combinations running now on production lines, a wide variety of top-quality cots must be used. Now, in plant after plant, Dayco has proved its laboratory tests on its full range of cots in actual production. Dayco offers a cot for every purpose. Each one is specifically designed for outstanding performance in a specific production situation with just the precise coefficient of friction. Dayco Cots deliver more yarn... better-quality yarn in mills everywhere, year in and year out.

This is just another example of Dayco service in the cot and apron field. Dayco's broad, continuous research and laboratory facilities have brought the most practical answers to the textile industry's spinning problems. Dayco's discoveries in precision compounding have resulted in closer precision tolerances than any other on the market.

Dayco research sought and came up with the answers on super-drafting at lower horse-power. Dayco's laboratory maintains quality controls on Dayco's own production line that have no match in its field.

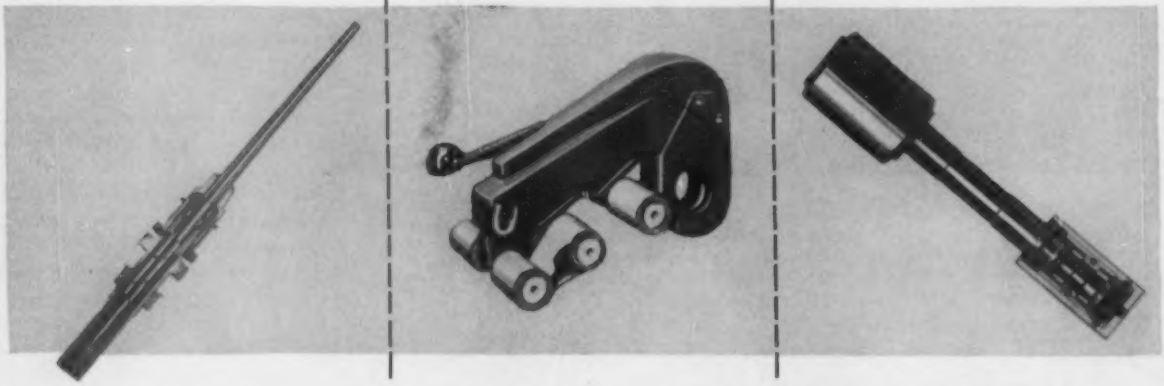
CIRCLE 39 ON READER SERVICE CARD



NEW SKF ROLLER BEARING BOLSTERS offer smooth acceleration, vibration-free operation and precision plumbing. Two models available—Type HF for heavy package, high-speed spinning, Type HZ for heavy-duty twister spindles.

NEW PK SERIES PENDULUM WEIGHTING ARM for spinning cotton, synthetic, woolen and worsted yarns under today's heavy drafting pressures. SKF-developed feature provides automatic alignment throughout drafting.

NEW DRAFTRITE® ROLLER BEARING TOP ROLL assures evenness of yarns, under heavy drafting pressures, and reduces chance of ends down. Two types available—one for lateral guidance, one for center suspension drafting. 6028



SKF backs up its new textile specialties with complete product data

What's the maximum permissible load for the new Draftrite top rolls? Can the new PK pendulum weighting arms be loaded and unloaded individually? What's the recommended break-in period for those new HF and HZ roller bearing bolsters?

To answer these questions—and many others—SKF offers a comprehensive booklet on each of its new textile specialties.

These data books are complete. Each contains facts and figures, photos and diagrams of the product's design, features, installation and maintenance.

References like these are indispensable when you're considering new equipment, modernizing machinery or simply replacing worn-out parts. Because with them, you can go right ahead with your plans—with all the pertinent facts on hand. Of course, an SKF textile specialist is always available for consultation.

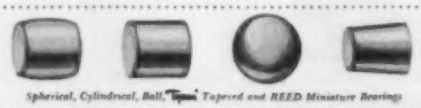
To get copies of these valuable time-savers, just

CALL OR WRITE SKF TEXTILE SALES OFFICE

Front Street and Erie Avenue
Philadelphia 32, Pa.
GArfield 6-9620

2935 South Griffith St.
P.O. Box 3031, Charlotte 3, N. C.
JAckson 3-6232

P.S. Ask, too, for complete data on SKF Type "SR" Tension Pulleys. They eliminate tape jump-offs, ensure uniform spindle speeds and permanent pulley adjustments. And they only need re-greasing after 20,000 working hours—about once every 3 to 5 years!

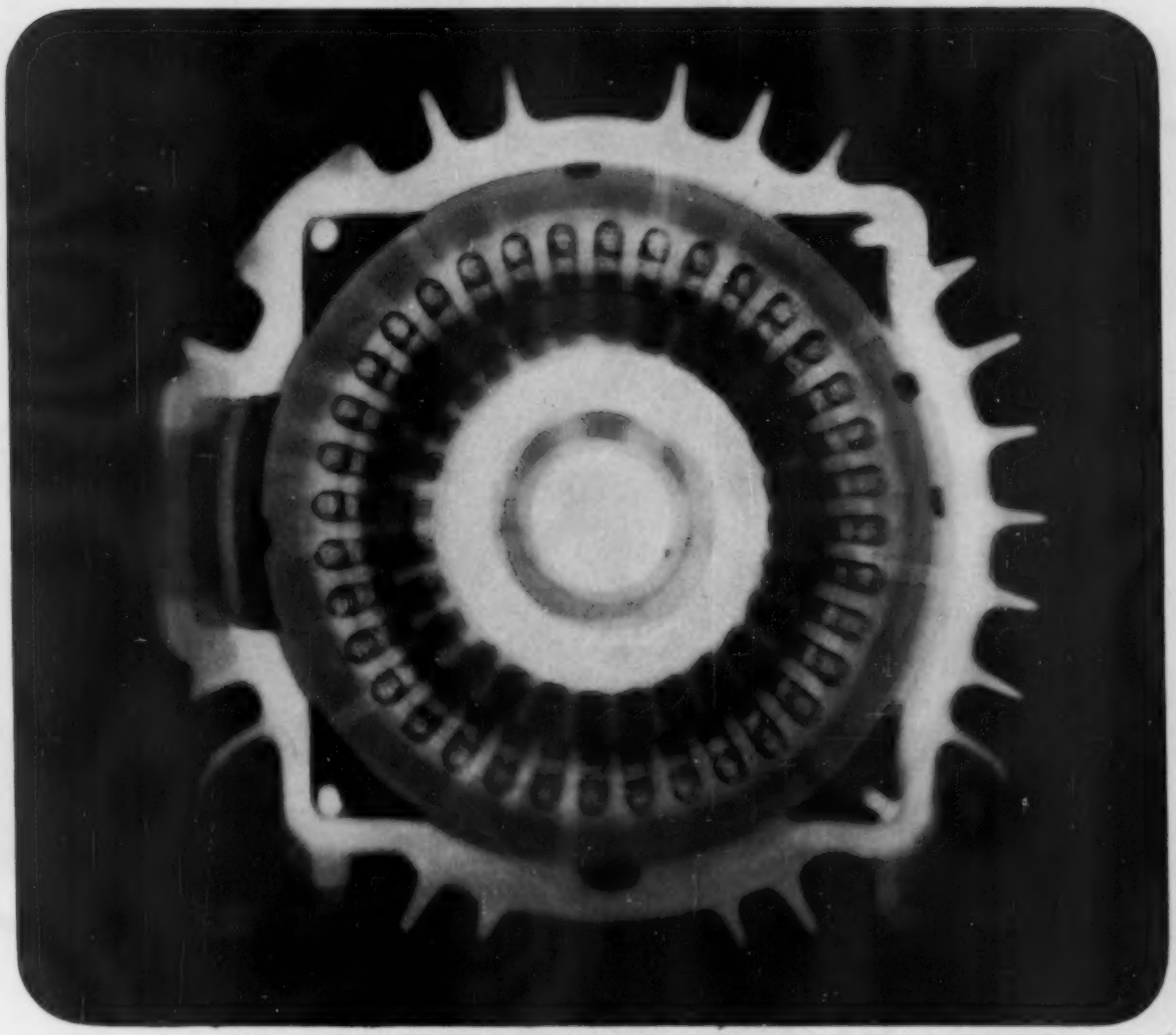


Spherical, Cylindrical, Ball, Timken® Tapered and REED Miniature Bearings

EVERY TYPE—EVERY USE
SKF®
SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

ALLIS-CHALMERS

A-1343



Radiograph of a 5-hp, Type GZQ, totally-enclosed textile motor, "X-rayed" with a 24-million volt Allis-Chalmers Betatron.

How to "read" an industry standard

Invisible standards of perfection made this motor the industry leader!

Thinking beyond the written standards of motor design . . . striving for a new degree of perfection . . . has resulted in this Allis-Chalmers TEFC motor for textile applications. It's a motor which is fast becoming an industry standard in itself . . . suitable for all textile plant uses.

A-C pioneered the much-imitated-but-never-equalled ribbed frame design. Ribs are specially contoured and finished to prevent lint from sticking regardless of humidity.

The fan can be located on either end of the motor without changing the "BA" dimension. The powerful fan circulates cooling air and keeps lint moving away from the motor in even the most lint-laden locations.

For more facts on how you can standardize on Allis-Chalmers Type GZQ textile motor, call your nearest A-C representative or distributor. Or write, **Allis-Chalmers,** *Industrial Equipment Division, Milwaukee 1, Wisconsin.*

Allis-Chalmers lint-free totally-enclosed fan-cooled textile motor driving spinning frame. Can be applied in any production area . . . permits motor standardization throughout the mill.

On the Spot Personal Attention

. . . right in your own mill!

Problems in your Card Room? Ask a TUFFER Sales Engineer to visit your mill and give you assistance in working out a solution. You'll get logical, workable suggestions and recommendations that mean increased production, improved quality, less down time. Your inquiry involves no obligation.

Tuffer TRADE MARK

CARD CLOTHING

Manufacturers of Card Clothing since 1866

Tuffer **HOWARD BROS.** 73

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C., Greenville, S. C.

Direct Representation in Canada

TUFFER PRODUCTS Card Clothing for Woolen, Worsted, Cotton, Asbestos and Man-made Fibers • Napper Clothing and Brushes • Top Flats re-covered and extra sets loaned at all Plants • Lickerins rewired at Southern Plants • Hand Stripping Cards

Soundest Answer to Imports

Not long ago we had a four-day stretch of traveling and listening. We traveled to three cities in the Midwest and listened as top executives of over a dozen manufacturing companies, with coast-to-coast and world-wide markets, talked about their problems, their answers, and their view of what's ahead in business. These men manage companies in a broad cross section of American industry—heavy equipment, metalworking, transportation, electrical and electronic equipment, appliances, petroleum, and the like.

Why bring up this trip? First, because some of these men are plagued with competition from low-cost goods from overseas. (Don't think they aren't hurting. Just ask them. They'll pin your ears back telling you how painful the foreign competition is.) Second, because we're struck with the way they are meeting this problem. And third, because we're convinced that the only real and lasting solution to the textile-industry's import problem lies in the textile-industry's doing just what these Midwest businessmen are doing—fighting their battle themselves, without dissipating their energies and their independence in a quest for help that may not come at all and, if it does come, may be worse in the long run than no help at all.

What are these Midwestern companies doing—the ones who have to wrestle with an import problem?

One thing they're not doing. They're not asking Washington to rescue them. In the first place, they're doubtful they could get any real help even if they went after it. In the second place, they're heeding the lesson learned by some other industries that have sought help in Washington—only to rue the day they ever asked for it. That lesson is this: For every ounce of protection Washington grants, it exacts a pound of freedom. These Midwestern executives put a high price on their freedom. They won't trade any fraction of it for the kind of shelter Washington offers. For them, no pilgrimages to Washington. (Exception: the oil industry, which begged—and got—import quotas some time ago. Even so, some oilmen today think the industry never should have asked for quotas. And a substantial number of them feel the government's protective embrace is more painful than helpful.)

The truth is, these Midwesterners are going after their competition from overseas the same way they go after competition from their neighbors here at home. They see competition as one big package of problems, whether it's domestic competition, or foreign, or both. Sure, it would be nice if the whole package—or some part of it—went away. But it won't go away. So they face up to it, taking the view that if there's any difference between domestic and foreign competition, it's a difference of magnitude, not of substance.

In the same way, they see the answer to competition as one big package of answers. If they see any difference between the answers to domestic and foreign competition, it's that the addition of foreign to domestic competition calls for harder work and longer hours in the office, in the factory, and on the sales circuit.

What is this one big package of answers? Here's what these Midwestern manufacturers are doing—and expect to keep on doing:

• **Buying and installing new machines and equipment.** As one of them put it: "Even if business does sag a bit, we can't afford to cut back on our investment in better, faster, more automatic machines. That's the only way we can bring our costs down. And that's the only way we can stay in business—and ahead of our competition."

• **Selling harder—and smarter.** They're developing more sensitive indicators of market swings and customer needs, pinpointing their sales efforts, going hard after new customers, and seeking new applications for familiar products.

• **Looking for new products.** To a man, these Midwestern manufacturers are spending a bigger fraction of their sales dollar each year for research and development. They see no reason for cutting back now. Payoff: One of them says he expects 50% of his sales three years from now to be from products not yet developed.

• **Improving quality and service.** They're talking about new and better materials to go into their products, better engineering to stretch life and improve product performance, and better trained salesmen, distributors, and servicemen. They're also talking about faster delivery schedules that enable their customers to run with lower inventories.

• **Getting more from people.** One of these men reports that his people (union and non-union alike) have responded well to a straightforward presentation of the facts of business life. Result: vastly improved job performance. Another reports a new firmness in office and plant procedures and in personnel administration. Result: a 26% cut in payroll over the past three years and—at the same time—an increase in total work output. How cut the payroll? Just refuse to tolerate shiftlessness, incompetency, and work duplication. With the right approach, this executive says, unions will understand and accept hardheaded management of this sort.

All this, we submit, is sound doctrine. It's sound doctrine for textile manufacturers as well as makers of radios and TV sets. Any other program is peripheral to the basic problem of competition, doubtful as to outcome, and unproductive of the strength the textile industry must have for the years ahead.

NEW PROCESS

Eliminates variations

in 75-Gauge Latch Needles

Textile Machine Works developed an entirely new manufacturing process for the new 75-gauge Latch Needles.

It began in the Textile engineering department, with a thorough analysis of all latch needles currently available for the knitting of ladies seamless stockings. Manufacturing techniques were studied and evaluated.

Textile engineers were not satisfied until they had developed a completely new approach — a unique and exclusive manufacturing process.

The results are now a matter of record.

The new 75-gauge Textile Latch Needles are outstanding in quality of knitted fabric, in trouble-free performance at top knitting speeds, in maintenance-free operation.

The new needles are uniform in every detail. Each is a precision knitting tool — completely free in latch movement, stronger at the latch than ever before possible, amazingly smooth in finish.

If you haven't discovered the superior performance of the new 75-gauge Textile Latch Needles, talk to the Textile representative about a trial installation in one machine, or a battery of machines. Call us today.
Textile Machine Works, Reading, Penna., or Asheboro, N. C.

TEXTILE MACHINE WORKS
Where engineering makes the difference

The Systems Approach —New Key to Better Mill Profits

Market conditions often upset conventional production-planning methods. But this new kind of planning will fit production, inventory, and marketing into one big integrated pattern. It will help you stay flexible—and profitable. To see how, turn the page.

By Walter F. Friedman, Vice President, Dasol Corporation, New York City

"ALL OUR EFFORTS to get superior styling, top quality, large stocks, attractive prices don't mean a thing if we keep losing orders because we can't make shipments on time."

That's how a leading textile-manufacturing executive describes the dilemma facing many a mill manager today. Fact is, today's mill man is caught between two sometimes conflicting forces. On the one hand, he is a production man preoccupied with turning out quality goods at competitive cost—on schedule, of course. But on the other hand, he knows that often his best efforts are frustrated by market conditions over which he has no direct control.

So what do he and his top management do?

If they're up-to-date, they try to make the most of market conditions on their own terms. How does a manager do that? Where do you begin? One good place to start is with a new point of view—a new way of thinking about production generally and inventory specifically.

Why inventory? Because, of all the elements that can disturb your cost calculations, nothing can cause more of a drain on profits than mismanagement of inventories. This is the crucial link between mill and market—the point at which supply meets demand.

The term for this approach to management problems is the "systems approach." The heart of the systems approach is this: You look at the total system, not just at one part in isolation. And if you succeed in taking a wide-angle view of your cost problems as they affect inventory problems, the probable payoff is far larger savings than otherwise possible.

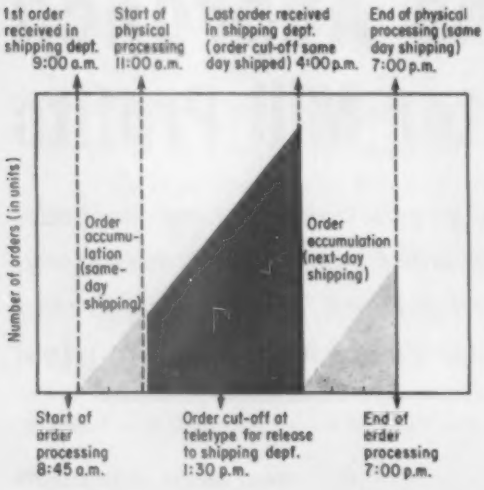
For example, you can't accept the movement of one piece, 10 pieces, or even 500 pieces of goods from one place to another, no matter how modern your conveyor system might be, without examining all the angles: Why is it necessary to handle goods that way? What is the nature of your raw materials? What form do they arrive in? What equipment do you need to handle them?

One complicating factor is that there are no generally recognized cost yardsticks to go by. For that matter, it has only been in recent years that cost-conscious managers have turned to a close examination of each element of cost in handling —starting at raw materials, going through production, and continuing right on through packaging, warehousing, and shipping. But so recent is this kind of investigation that reasonably accurate estimates of these costs are hardly available.

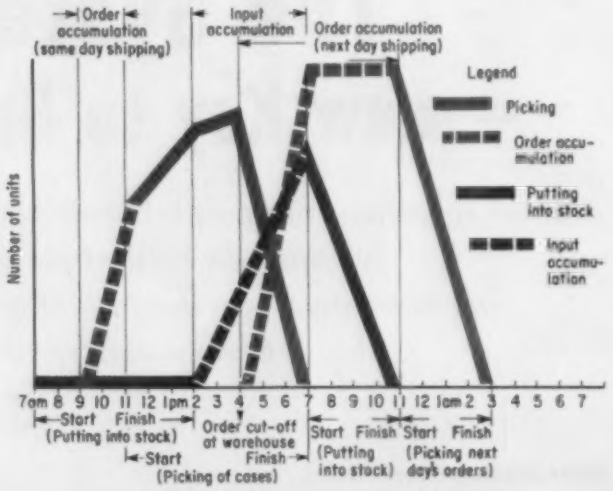
The problem is further complicated by the fact that there is no single point of responsibility for material-management costs, because the function ordinarily falls somewhere between the purchasing agent, the mill superintendent, the traffic manager, the industrial engineer, and top management. That's why you often discover that material-management costs are buried in the profit-and-loss statement under a baffling multitude of headings. Perhaps that's the key reason why clear-cut policies for improving customer service are lacking.

The Systems-Management

1. Study the work flow


1st order received in shipping dept. 9:00 a.m.
Start of physical processing 11:00 a.m.
Last order received in shipping dept. (order cut-off same day shipped) 4:00 p.m.
End of physical processing (same day shipping) 7:00 p.m.
Number of orders (in units)
Order accumulation (same-day shipping)
Order accumulation (next-day shipping)
Start of order processing 8:45 a.m.
Order cut-off at teletype for release to shipping dept. 1:30 p.m.
End of order processing 7:00 p.m.

2. See how the men work



PUTTING THE SYSTEMS APPROACH TO WORK

Dasol Corp. recently worked on a job of systems engineering for one of America's larger textile manufacturing concerns.

The starting question was this: How can the company get most flexibility from its inventory and warehouse management? Or, to put the question another way, how can the company maximize the profitability of its operation by better customer service?

Next step was to set forth some general principles of action to underline and help define the systems approach. Here they are:

Top-management support—Enlisting the approval and agreement of members of the executive team is an important step. Each successful application of systems engineering involves a policy decision by management that recognizes the limitations of hit or miss material-management cost calculations.

Flexible management—One important aspect of the systems approach in any cost problem is that the solution will very likely cut across the usual organizational lines. That's why management has to be willing to accept a disruption of normal "channels" from time to time in the interests of finding cost-cutting solutions to problems.

Systems "language"—A third important principle in setting up a systems approach to inventory problems is to state the problems in systems language. That's another way of saying that when you set forth a definition of a problem, you list all the ramifications. That way you can come up with alternate solutions that set new standards of efficiency, cost reduction, customer service, and management control.

Once you have created the climate for the systems approach, you can go ahead and begin staking out the limits of your probing. For instance, we at Dasol approached our client—whom we'll call the ABC Manufacturing Co.—by asking the most important question: How can ABC satisfy its customers best and at the same time improve its own operations?

If asking that question is the starting place, answering it is the finishing place. So before Dasol could come up with the answer, we had to ask more specific questions.

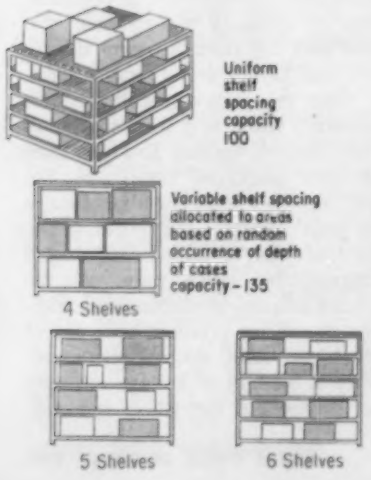
- What things prevent ABC from performing most efficiently in the face of seasonal swings and frequent hurry-up customer requirements?
- Are present physical and clerical order-processing procedures to blame in any degree?
- What about ABC's out-of-stock position?
- How about communications—both within the mill and from the outside?
- What about the traffic situation?

FINDING ANSWERS

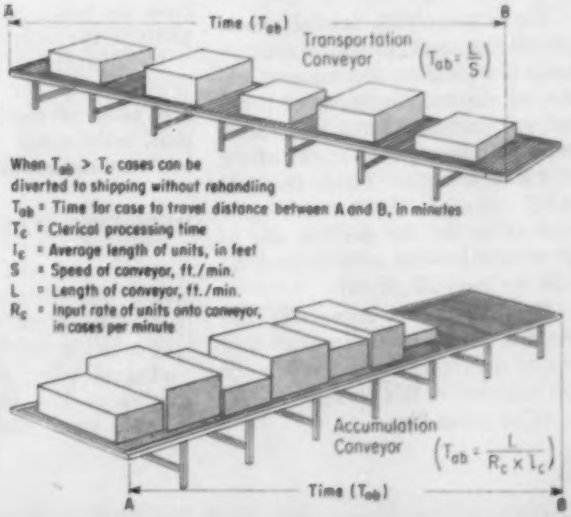
One early answer to the communications question was this: ABC had a fine Teletype system intended to speed order transmission and expedite shipment. But it became clear that the system was working to advantage on only a small per-

View of Inventory Control—

3. Seek flexibility


Uniform shelf spacing capacity 100
Variable shelf spacing allocated to areas based on random occurrence of depth of cases capacity - 135
4 Shelves
9 Shelves
5 Shelves
6 Shelves
7 Shelves

4. Get more from equipment


A
Time (T_{ab})
B
Transportation Conveyor
$\left(T_{ab} = \frac{L}{S}\right)$
When $T_{ab} > T_c$ cases can be diverted to shipping without rehandling
T_{ab} = Time for case to travel distance between A and B, in minutes
T_c = Clerical processing time
l_c = Average length of units, in feet
S = Speed of conveyor, ft./min.
L = Length of conveyor, ft./min.
R_c = Input rate of units onto conveyor, in cases per minute
Accumulation Conveyor
$\left(T_{ab} = \frac{L}{R_c \times l_c}\right)$
A
Time (T_{ab})
B

centage of orders. In fact, ABC had been forced to set an early cut-off time on orders for same-day shipment.

Result? The high-speed Teletype communication system wasn't any more effective than regular overnight mail. That provided a clue. Something was keeping the Teletype out of phase with other order-processing operations. That's another way of saying that the best new equipment wasn't working for ABC because somewhere else the system was running out of gear.

On top of the time lag in processing orders, ABC had the related problem of not being able to keep its output in proper phase with market conditions. Frequent out-of-stock conditions sometimes caused one- to two-day lags—and sometimes lags of a week or more. And sometimes they even caused the loss of an order.

As one ABC manager put it: "Our cancellations, returns, and potential orders that we didn't realize were rising. Much of the lost business was going to our competitors, who could deliver immediately."

It's easier to define the broad solution to this kind of problem than it is to fit all the separate parts of such a solution together. Nevertheless, it clarifies the task right at the outset to set up the broad framework and then fit the individual elements together.

BUILDING A FRAMEWORK

First thing ABC needed was a system that could provide a controllable flow of data and material under all varying conditions of product unit and both input and output capacities through all stages of the distribution cycle. To do that job, ABC needed equipment good enough to do the job but not so good as to provide an inadequate return on invested capital.

By analyzing the entire ABC operation, Dasol came up with four major recommendations, which can be described in this fashion:

- Cut rehandling.
- Reduce wasted manhours.
- Take advantage of odd-size packages and cartons.
- Speed order picking.

One by one, here's how these recommendations helped ABC solve not only its material management and inventory problems, but become more responsive to the ebb and flow of market demand.

CUTTING REHANDLING

Some of ABC's mill goods were consigned immediately for shipping after the packaging operation was completed. But goods could not be taken immediately to a shipping staging area because of a delay caused by preparing a bill of lading (which had to show the number of pieces per shipment and the weight).

Therefore such goods had to go to a "hold" area, where they were kept until all the paperwork could be brought together in one place. Result: Lots of rehandling time plus extra time to find the right goods once the paperwork was completed.

Our solution to this problem was to design a conveyor that runs from the packaging line to the "Hold" area—a total of 200 feet. At first, the plan was to remove boxes that were awaiting the bill of lading. But then a better idea occurred. By indexing the cartons forward at a slow rate, today we provide enough time in the 200-ft. trip of each carton for office people to complete the paperwork before the carton comes to the end of its journey. Now the boxes can be diverted directly to the shipping area.

By applying systems engineering principles to the problem, **ABC now takes advantage of the natural time relationship between clerical and material-handling tasks.**

REDUCING WASTED HOURS

Another of ABC's problems was getting top efficiency from workers by juggling schedules for peak shipping hours in the afternoons. With packaging being carried out in a continuous flow, merchandise moving into stock had to be continuously removed from the packing conveyor. That way both manpower and mobile equipment were kept busy during critical hours for the input of merchandise not urgently needed. As a matter of fact, about 30% more warehouse labor than ABC really needed was on the rolls. Result was high activity during peak hours but inefficient over-all labor deployment. During slack times, the men were not busy at all.

By studying the input and output relationships, Dasol along with ABC came up with the idea of staggering the labor force to meet peak demand times (between 2 and 7 p.m.) by cutting input of goods during that five-hour period. A series of transportation conveyors was recommended to cover the various sections of the warehouse and to act as accumulation devices while the peak shipping activity was going on. Now, as soon as order picking is complete, the labor force empties the conveyors by putting the goods right into stock. Payoff: better efficiency, despite a considerable reduction in warehouse workers. **Today, ABC can handle 40% more orders in a day than previously.**

ODD SIZES PAY OFF

Congestion such as that in ABC's warehouse and shipping areas is probably the cause of more order-handling delays than anything else in the typical textile mill. Periodic or seasonal lack of space can be the result of a number of conditions, including an uncontrolled inventory condition, improper use or organization of space, or a warehouse that just isn't big enough—even if control and layout are otherwise ideal.

Even though textile-mill products normally come in a wide variety of sizes, shapes, weights, and quantities in their packaged state, you can still turn this apparent disadvantage to your benefit. ABC did. The method was to adopt randomized storage, by which units can be placed into any available space without regard for product type, age of stock, or other storage conditions. Such a method of storage is popular throughout the whole industry.

Eight Guides to Better Material Management

1. Are you organized—and do you have top management support—to apply system engineering principles?
2. Is your data communication system in phase with your clerical and physical operations?
3. Is your production scheduling and control system designed to give you an optimum inventory position?
4. Do you control your inventories with customer service as the main criteria?
5. Do you organize your stock for maximum cube capacity, speed, and economy in picking?
6. Is your material-handling system compatible with your input and output loads?
7. Do you schedule your labor for peak shipping requirements?
8. Do you apply control procedures throughout the product and data flow cycle?

With a suitable stock-location system (for example, with units numbered against a warehouse location), picking by area can be done efficiently. But if the warehouse is designed for random accessibility, and if items go into uniformly spaced racks or shelving without multitiering, you lose considerable space because of the size variations. On the other hand, this form of storage can result in lower operating expenses, because there's no rehandling to speak of.

Where a mill needs random accessibility, but units are stacked one on top of the other (such as on pallets), you can get far greater cube utilization than with uniformly spaced shelves. But stacking packages on top of each other means you have far higher rehandling costs, and ultimately higher operating expenses than with random accessibility based on uniformly spaced racks.

ABC's system began with a thorough stock analysis that resulted in the division of the warehouse into various segments, each of which now has its own rack-spacing pattern according to cube requirements. In addition, frequency of input and output by unit size also was used to find the best pattern for ABC's warehouse.

Payoff today is 45% more overall capacity for random access than formerly. Balancing this benefit is the loss of some flexibility, which ABC management was happy enough to trade for greater efficiency and lower cost.

SPEEDING ORDER PICKING

Area picking is becoming a fully recognized method, particularly in large warehouses like ABC's, where travel is thus minimized. Key to an effective system is identifying each unit by a number. If each unit is so identified, management can keep a location tab card in a tab file until the unit is sold. At the time the card is pulled, the address of the customer goes on the card. Thereafter batches of the cards are collated by areas for subsequent batch picking. Then a warehouse employee glues the card (as a label) to the unit and moves it to the shipping staging area.

A further refinement at ABC includes a control tab (as part of the location tab card) that is removed before loading the outgoing carrier. This serves as a check on shipments made by a carrier against a tabulation for that carrier.

For gaining speed in the shipping operation, particularly where outgoing carriers pick up in the afternoon, a shipping staging area is a boon. But the size of such an area can become excessive if numerous carriers pick up goods for shipment daily.

Mill men at the Greenville show were facing up to the time for decision. Their choice: faster modernization of mills to cut costs, give profits a shot in the arm—or lost opportunity.

Modernization Pace

MARK the 21st Southern Textile Exposition (Greenville S. C.) as a crossroads for the industry—a place and time for decisions.

For the big show—and a big one it was—dangled a bright future within reach of the thousands of textile management men who patrolled its aisles and probed, prodded, poked, and gawked at the array of equipment and supplies on display. The decisions these men faced in Greenville—and face with equal urgency now that they are back at home base—is whether to quicken the pace of technological advance and thus grasp the bright future now within their reach, or back off with faint heart and let the opportunity pass.

One thing is sure: They can't delay decision much longer.

What happened between the closing of the Atlantic City show last May and the opening of the Greenville show? Why is decision more urgent now than than?

Two things happened:

- A decision in Washington reversed the hope of mill men for protection against imports.
- Textile production eased off in the face of markets that were spotty here and there.

Both factors—imports and the market dip—upped the pressure to cut costs, boost efficiency, trim labor, and lift quality. And that's why decision becomes more urgent today than ever before.

Mill men at Greenville seemed well aware that this was a time of decision. And there was plenty at the show to tempt them. They looked

Quickens at Greenville

hard and close at machines that promised a competitive edge over neighboring mills and overseas mills. They looked with canny interest at instruments, controls, and automation systems—at whatever promised savings in manpower, materials, manufacturing, or maintenance. They double-checked equipment that was new at Atlantic City—double-checked it for modifications made since last May, reappraised it for use now. And they clustered around the booths of exhibitors from overseas, who were at Greenville in greater numbers than ever and who showed equipment that was more significant than they had ever before displayed at Greenville.

Against the background of the Greenville show, how did mill men (and exhibitors, too) see their industry—its technology, its needs, the present state of its business, and its future?

TECHNOLOGY—FASTER

Listen to these men at the show:

Opening, carding, and combing—Here's what they said:

"Blending at opening is for us," said one. "We can use the extra production that comes from opening at 60 pounds per hour, with 10% better cleaning, and blending in the same operation."

"Automatic doffing at pickers is what we're looking for—a saving of 8 to 10% in downtime and elimination of start marks."

"New attachments for cards strike a spark with us," said another. "We're going for increased production, fewer short fibers in sliver, and crushing trash at the card web."

"We're putting our money on new combers with output of 53 up to 60 pounds per hour. We're looking for three things—precision of machines, quality of product, and high speed," said still another.

"What we need is better opening and blending equipment that will smooth out the irregularities in today's cotton," said one mill executive, "because cotton gets worse and worse every year. The gins clean it at 5,000 pounds an hour to raise grades. They raise grades all right, but they beat the cotton to death doing it."

If equipment displayed at Greenville is any measure, machinery makers are responding to this need. Among units they displayed were a blending feeder that holds twice as much cotton as standard feeders and produces smaller tufts, a blending feeder that pushes bales back and forth across a cotton plucker that removes small tufts from the bottom of the bale, and a carding feeder that keeps the mix uniform at all times.

Roving, spinning and winding—Here's what mill men were looking for and at:

"Souped-up conventional drawing appeals to us. We like the speed of 650 fpm.—and even 750 fpm.," said one mill man.

"Roving at 1,280-rpm. spindle speed looks good to us, with an almost guaranteed mill speed of 1,200 rpm.," said another. "Other things that appeal to us are magnetic clutches, automatic positioning of flyers at stops, and aluminum flyers. And of course we're watching constant speed control, gears in oil baths, and ends-down stop motion."

"Automatic spinning doffing is just around the corner," one mill man observed. "Already it's paying off on coarse yarn numbers."

"We've been looking at spinning frames with double or even triple the speeds of machines just six years ago. We're also looking at ever-increasing electronic devices, universal drafting systems for all fibers, and narrow widths," another mill man reported.

"Winding yarn at 1,200 yards per minute on almost any fiber is certainly for us," another said.

Weaving—These are typical comments by mill men:

"With higher speeds taking over in yarn preparation, we're forced to look closely at higher-speed looms as a way of avoiding bottlenecks. Maybe shuttleless looms are the answer. We don't know, but we're looking," said one man.

"Within five to six years," said another, "weaving will be completely revolutionized by shuttleless looms. They'll make all other methods of handling filling yarns obsolete. They'll be equally effective on spun fibers and continuous-filament fibers. Already, on conventional looms, we're running sheer filament yarns satisfactorily from cheeses."

TRENDS—SPEEDING UP

New trends at Greenville? There weren't any. What *was* new was the way trends spotted at Atlantic

Big News at the Show: Growing

City last May are now picking up speed.

Speeds and packages—They're getting faster and bigger.

Take card coilers, for instance. At the show mill men saw giant 24x42-in. coilers and cans and some 18-in.-diameter cans on two double-head drawing frames. As for speeds, one cotton-system spinning frame was running at 15,000-rpm. spindle speed on 40s combed yarn—representing a production gain of some 50% over today's most modern mill operations.

Automation, instrumentation—Take automatic doffers, for instance. Two automatic spinning-frame doffers were on display at Greenville, and movies showed a third on the way. Some mill men are itching to get their hands on them. Said one: "To speed these machines to perfection, the manufacturers ought to put them in a good mill and let the mill men find out where the bugs are. The boys in the mill will spot the trouble and fix it in a hurry." (Fact is, both automatic doffers displayed at the show are now under test and study in operating mills.)

That view reflects the feverish search of many a mill man for labor savings, higher quality, and waste reduction—all of which will come through more automation and more instrumentation and control. The search goes beyond manufacturing and process controls and into office procedures. Data-processing equipment played a big role in the show, and mill men showed a growing interest in what such equipment can do not only for accounting and payroll but also for inventory and production control.

Direct spinning—Interest seems to be on the upswing. Many mill men pooh-poohed direct-spinning machines when they first came on the market several years ago. But some recent production installations of foreign-made equipment in American mills are reported to be working out well. The first American-built machine capable of spinning from 10s to 100s put in its appearance at Greenville.

Flexibility—The big show spotlighted the growing versatility and adaptability of textile machinery. For example, mill men saw several types of winders that can put a variety of fibers and blends on cones, tubes, and dye sleeves. They also saw equipment that makes production changeovers easy, equipment with easier gear changes, equipment with built-in variable-speed drives, and accessories and auxiliaries that put new speed and versatility into already-installed machinery.

Design—If the Greenville show is any indication, twisters have now been caught up in the same trend that produced narrower spinning frames just a few years ago. One of the new twisters on display was only 25 inches wide—a big saving in floor space. Floor-space saving is also a bonus benefit with the new two-head drawing frames, which make substantial cuts in square footage needed for creel cans.

Improved engineering and workmanship were visible everywhere, with the promise of longer machine life under high-speed operation. Design of machinery manufactured overseas appears to be having a strong influence on design of American machinery—clean lines, satin-smooth finishes, enclosed gears and sprockets, pleasing colors.

Modernization—If number of exhibits at Greenville is any indication, there's a fast-growing interest in modernization by changeover. As one mill overseer put it: "Our mill has just installed 60 new spinning frames of the most advanced type. But we have quite a few other frames that we plan to modernize. I'm here to compare changeovers."

A machinery manufacturer threw a different light on modernization. He said: "We've promoted our new frames until almost everybody knows about them. It's time we started reminding mill men that we have other things to sell. There are lots of mill men who don't want or can't afford new machines right now." A fellow exhibitor confirmed this view, pointing out that though demand for new equipment is strong, sales of replacement parts and accessories are booming.

Breakthroughs — There weren't any. Closest to a breakthrough probably were two applications of sonics to manufacturing operations. Visitors saw one sonic device that regulates the flow of fiber through a blending card feeder, another that spots a seam in cloth and automatically reduces pressure on feed rolls as the seam passes through.

YES—BUT . . .

If high speed seems the big thing, there still are mill men—and machine makers, too—who are taking a fresh look at it. They're relating it to other production factors and thus are coming to the view that though high speed is desirable, it's not the only measure by which a machine is to be judged.

For example, take that cotton-system spinning frame that runs at 15,000-rpm. spindle speed. The manufacturer himself warns that it is "essential that the textile mill first have the ambition to achieve such speeds. This ambition can be achieved only by producing and feeding uniform, high-quality stock, training operators in high-speed operations, and keeping the equipment clean and in top condition."

Here are the views of some savvy mill men in the issue of speeds:

"Yarn production is being speeded up so fast that weaving soon will become a bottleneck unless looms are speeded up, too."

"People are going crazy over big

Versatility of Textile Machinery

packages and high speeds. If you've got to run 12,000- to 13,000-rpm. spindle speed, why not do it on a 2-in. ring? For many yarn numbers and types of cotton your gains in quality and frame efficiency will offset the advantages of the bigger packages. And you'd have a lot of fewer ends down."

And here's the view of a manufacturer of drawing frames: "Sure, I've got a frame that will run 750 fpm. or more. But I'd rather recommend 500 fpm. because I don't believe the higher speeds are economically justifiable at the present time."

AND HOW'S BUSINESS?

That depends on whom you ask.

Talk to one mill man, and he'll tell you he's never been busier. Talk to another, and he'll weep on your shoulder. Ask machinery manufacturers, and they'll talk in terms of big backlogs. But ask suppliers, and most of them will tell you their textile business has eased off. Fact remains, business was reported lively at the show. "Sold" signs were not uncommon on equipment being displayed, and there were reports that several good-sized contracts were closed before the show ended.

As for the current state of business and the outlook for the month ahead, listen to some exhibitors.

Said one equipment maker: "We may get some slacking off of new orders before the end of the year. But right now we're sold through November 1961 on our machines. September was our best month of the year thus far—and 1960 has been a good year."

An electrical manufacturer saw it this way: "We're having our best year since we decided five years ago to go after the textile market. And thinks look good at least as far as the end of this year. Our business is about equally divided between new plants and modernization programs. And modernization is running across the board—from the small, independent mill all the way up to the big unit of the big corporation. A few mills we deal with have shut down for a week here and there or have gone to a five- or four-day week for a while. But most of them soon wish they hadn't—they turn up with more orders than their looms can handle."

A loom manufacturer took this line: "This has been a good loom year—better than last year, in fact. But our sales of supplies are down a little in the past few months. Some of the small yarn mills we know have been on a three-day week for a while. But most of them are now back on five- and six-day weeks and are building up their inventories. They seem to sense the beginning of an upturn in business."

For manufacturers of instruments, controls, and automation devices, things are looking up. Said one sales representative: "My sales (instruments and controls) are double last year's. But the doubling came in the first half of this year. Since then things have slowed down. Most sales are for mill modernization programs. What my customers buy is a measure of the rate at which the industry is modernizing."

Said another: "We've never had so many inquiries about instruments and controls. Though the textile industry may have slowed down a bit, that slowdown isn't reflected in our business. We think this high level of sales marks a fast-moving trend to mechanization and automation in textiles—a trend to higher speeds and labor-saving devices.

Backing him up was a manufacturer of automatic lubrication systems: "We've got all the business we can handle between now and the end of the year. Sure, the mills have slacked off a little. But we seem to do better when they slow down a bit. That's when they have time to modernize and make our kind of installation. Besides, with the big pressure on costs today, they're looking for almost any way to cut their payroll costs. Automatic lubrication is one way."

What about suppliers? There business is pretty consistently off.

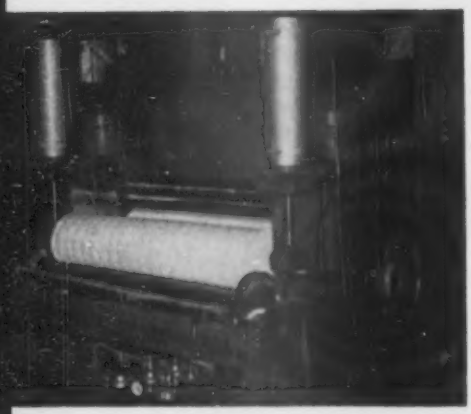
Listen to one of them: "Business this year is below 1959. But a drop-off in textiles hits us sooner than machinery manufacturers."

And another: "Our textile business is down a bit, to be sure. But we see it as a temporary sag, and we look for an upturn before the end of the year. Best thing this textile industry has ever done is to curtail production, as it's doing now, when markets weaken. Now that the bigger, integrated companies are in strong position, you can look for this curtailment to hold up pretty well across the industry. The little fellows may chip away at it but they can't really upset it."

This same supplier takes a pretty hardheaded attitude on imports. He points out that Japanese tapioca starch is coming to the United States in great quantities and at low prices. "We're not pinning our whole program on what protection we may get—or may not get—from Washington. We're working along other lines. We're lifting the quality of our product, we're stepping up our deliveries and our services, and we're busy developing new and specialized products. We're not worried. We're working—and selling harder."

And how are the foreign machine manufacturers doing? Fine, just fine. One of them from Western Europe reports that his company is booked 36 months ahead. Others at the show reported high interest in what they were displaying. Obviously they feel their attendance at shows like this one is sound business. This year they showed about 25% more equipment than they did in 1958.

NEW DRAWING FRAMES run 330 fpm., requires less cleaning. Twenty new Versamatic frames have been installed.



HIGH-COMPRESSION pneumatic lap controls have increased picker lap weight by almost 40%.

LAPPER CREELS were enlarged to handle new 16x42 cans. These machines are 20 ends up.

How 4 Mills Do the Work of 6

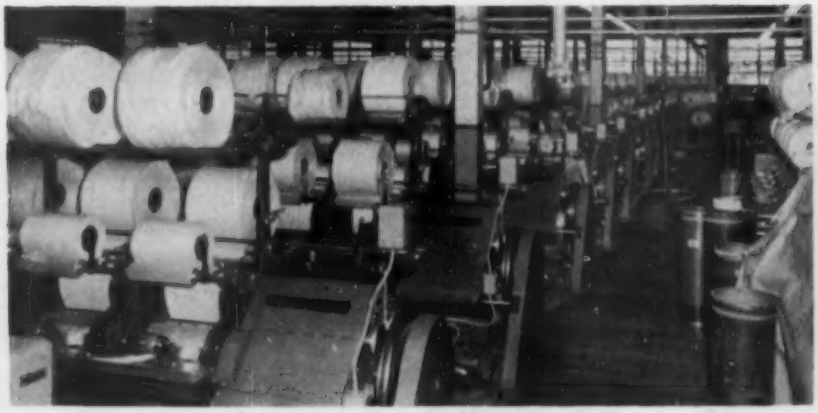
American Thread Co. recently spent over $3-million modernizing and improving operations at its Tallapoosa, Dalton, Willimantic, and Clover mills. Net result: Higher quality, more efficiency, better working conditions, and lower costs all around. Here's an inside look at the Tallapoosa and Dalton mills.

AMERICAN THREAD CO.'S modernization of its two big Georgia mills at Dalton and Tallapoosa is now complete. Investment amounted to $1.8-million at Dalton and $1.6-million at Tallapoosa. The company's plans also included the Willimantic, Conn., and Clover, S. C., plants, bringing the total investment to $3.5-million.

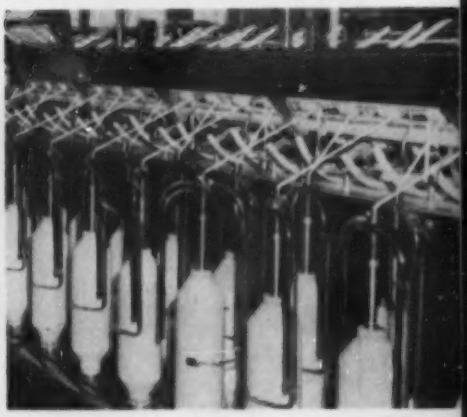
Net result is that the company soon expects to be producing as much yarn in four plants as it did

By WILLIAM G. ASHMORE
Associate Editor
TEXTILE WORLD

NEW COMBERS (21 of them) have 2 deliveries each and produce 51 pounds per hour. They remove from 16 to 18% noils. Manhour production is up 33⅓%.



NEW 13½x7 ROVING FRAMES have upped roving production 22,000 pounds per week in this department.



in six plants a little over a year ago. Quality is better, manhour production is up, cleaning and handling costs are down, and working conditions are greatly improved.

High-level thinking and planning on the part of the company's top management put the company in the best competitive position it's been in in recent years.

"During the next decade, the strong, high-quality, low-cost mills will prosper and the marginal mills will fall by the wayside," says President E. B. Shaw. This is the kind of reasoning that triggered management's decision to invest millions in new equipment.

The program has brought the two Georgia mills a full range of new drawing, combing, roving, and spinning equipment—plus work-saving devices and additional floor space.

The reasoning behind all this effort is explained this way by Sales Vice President C. E. Browne: "We're determined to give the company that elects to spend a dollar at American Thread the best possible value."

The underlying conditions that led to this declaration of policy include: (1) Shrinking per-capita consumption caused by the development of longer-wearing garments and changes in apparel styles; (2) intensified competition among domestic producers; and (3) growing foreign competition.

Management at American Thread believes that the flourishing United States population (estimated to rise another 25% during the next 20 years) will offset these adverse conditions in part. It's this growth that the company has its eye on when Mr. Shaw predicts, "Strong . . . . . mills will prosper."

That's the top-level thinking back of this program. Now, look at what's going on at mill level. On this and the following pages, you'll get not only a description of the new equipment and physical changes made in the Georgia mills, but processing details and methods of operation.

At Tallapoosa, Poundage Is Up

At Tallapoosa, the modernization and expansion program is paying off in several ways. First of all, the mill is producing about 22,000 more pounds of yarn per week with only a slight increase in the number of operators. Secondly, it has increased over-all machine efficiency and manhour production by approximately 25%. A third dividend: yarn quality is much better. And fourthly, the company expects to recover its investment in 5 to 6 years.

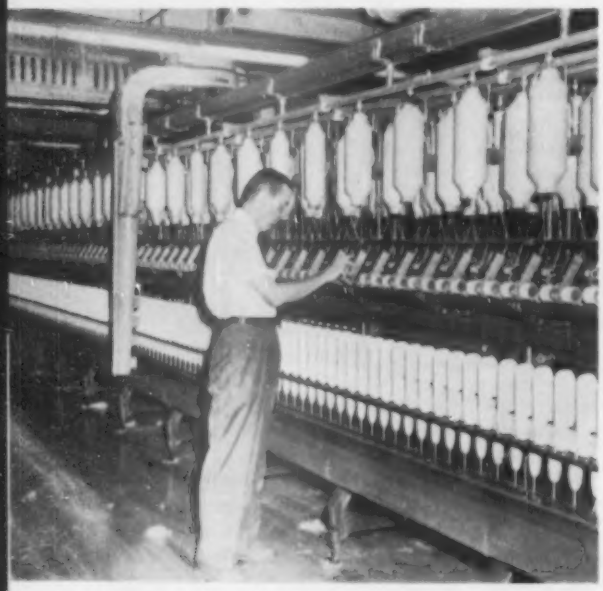
This program is the second major modernization and expansion effort made at Tallapoosa since American Thread purchased the mill in 1944. Total floor area was tripled in 1948 when a new 150,000-sq.-ft. addition was added. Latest addition, just completed, has 16,500 square feet of floor space on two floors. First floor houses twisters and doublers; spoolers are on the second floor. By moving the spoolers, the company made about 19,000 more square feet available for spinning.

Manager W. G. Littlefield, the man who directed the operation in the field, says of the 110 new machines: "The new equipment is

breaking in well and shows every indication of giving us the kind of performance we expected from the beginning. There's every reason to believe that the changes will result in continuous and secure employment for our operators."

Total production at Tallapoosa is 115,000 pounds per week, of which 90,000 pounds is ply yarn for thread. The remainder consists of singles yarn used for rubber covering and a 65-35 Dacron-cotton blend that goes into fine woven cloth. Cloth processed is $1\frac{3}{32}$- to $1\frac{5}{32}$-in. Peeler and $1\frac{7}{16}$- to 1½-in. Egyptian. Dacron is blended at drawing.

At Tallapoosa there are three lines of opening equipment—basically Whitin, Saco-Lowell, and Lummus. These machines produce about 150,000 pounds of stock per week. Five single-process cotton pickers and one Dacron picker now have pneumatic rack controls so that a 12½-oz., 62-lb. lap can be made. The cotton pickers have a three-blade back beater and a front Kirschner beater. Two Kirschner

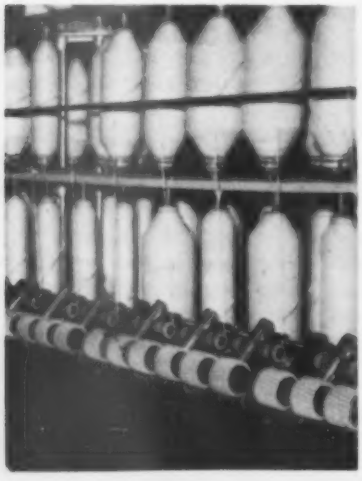


SPINNING FRAMES—60 Piedmont units—have helped boost spindle productivity and made new space available. Spinning capacity is now up by 25%.

SPECIAL CAM on most spinning frames was designed by Manager Littlefield. Cam produces new bobbin build. Result: Spoolers run 1,425 yards per minute.

TWISTERS have 4-in. rings and 9-in. lift. They run at 6,400 to 7,750 rpm., make packages of two- and three-ply yarn.

REBUILT SPINNING FRAMES with STA drafting average 20 to 25 ends down per thousand spindle hours.



beaters are used on the Dacron picker.

The 247 cards process Peeler cotton and Dacron at 6 pounds per hour. Egyptian cotton is carded at 5 pounds per hour. Cotton cards are pneumatically stripped three times per shift and roller stripped once a week. Dacron cards are roller-stripped once per shift. Card settings are a little closer for Dacron than for cotton. For example, doffer to cylinder is set 0.005 inch for Dacron, compares with 0.007 for cotton. A 50-grain Dacron and 47-grain cotton sliver are made.

Ten new Versamatic drawing frames with a total of 40 deliveries replace 80 deliveries of old breaker drawing. The new frames run 330 fpm. compared with 150 fpm. for the old drawing. The 16x42 cans hold nearly three times as much stock as the old cans. Another advantage is that the new frames are eight ends up, which produces evener sliver. A 47-grain sliver is fed and a 40-grain sliver is delivered.

Lapper creels were rebuilt to handle 16 x 42 cans. Six machines running at 180 fpm. produce a 28-lb. lap for the combers. Some operators run both breaker drawing and lappers. In this department, manhour production is up 25% and poundage is up 33⅓%.

ALL NEW COMBING

The combing department also is brand new. Here, 21 Model 57 Saco-Lowell combers have replaced 25 old Tunstall combers. These machines have 12 laps, 2 deliveries each, and run at 126 nips per minute. Production is 51 pounds per hour, compared with 44 pounds for the old combers. Manhour production is now up 33⅓%.

Formerly, Tallapoosa used 102 deliveries of two-process drawing after combing. These machines have been replaced with 40 deliveries (10 frames) of one-process Versamatic drawing making a 70-grain sliver at 260 fpm. Manhour production is expected to be up 66⅔% when the machines are broken in.

A number of changes were made in the roving department. Most important: installation of eight 96-spindle, 13½x7, Saco-Lowell FS-2 roving frames. These frames produce 0.90- and 1.25-hk. roving and make a package that weighs 5 pounds. Spindle speed is 700 rpm.

Seven Platt roving frames were equipped with Pneumastop, and the creels were enlarged to handle 16x42 cans. These machines make 1.80-hk. roving that is put into 10x5 packages weighing 1¾ pounds each. Spindle speed is 1,000 rpm.

Four 8x4, 160-spindle Saco-Lowell FS-2 frames are used to process 5-hk. Dacron-cotton blend at spindle speeds of 1,050 rpm. Packages weigh 1 pound each.

The biggest expenditure that the company has made for new and improved equipment was in the spinning room. Here, 60 new 312-spindle Whitin Piedmont frames with 3½-in. gage and 2-in. rings have been installed, and 72 H&B and Saco-Lowell frames have been modernized with STA drafting, antifriction spindles and Collectovac cleaning. In addition, 37 Whitin F-5 frames have had 10x5 creels replaced with creels that can handle 13½x7 packages. And very shortly, 39 more Whitin F-2 frames will be equipped with 13½x7 creels and STA drafting. These frames already have antifriction spindles and vacuum end collectors. All of these changes have boosted spinning capacity 25%.

From spinning, the yarn goes to six Foster doublers where two or three ends are fed. The Tallapoosa mill is experimenting with a creel that will feed three ends more efficiently. The doublers have 110 spindles each and produce a 6-lb. package.

One new 190-spindle Barber-Colman Model DD spooler has been added, which gives a total of five spoolers in operation. The other four are 180-spindle Model D machines.

Tallapoosa also rearranged its twisters. The mill operates 89 of these machines, which have 4-in. rings and a 9-in. lift. Two- and three-ply yarn is twisted into a 1½-lb. package at spindle speeds of 6,400 to 7,750 rpm.

Ply and single winding is done on 10 Foster 102 winders that produce 1½-lb., dye-spring packages and cones up to 4½ pounds. Recently, two winders were moved in from the Newnan plant.

The last step in Tallapoosa's operation is to pack the yarn in collapsible steel Cargotainers for shipment by truck to the Sevier, N. C., finishing plant.

Aside from improvements in productive equipment, the Tallapoosa plant has installed a Parks-Cramer air-change system that makes working conditions far more comfortable. This system can lower temperature as much as 10°F. at times during the hot summer months. Another aid to comfort are the numerous mechanical cleaners.

Machine Efficiency Is Cutting Costs at Dalton

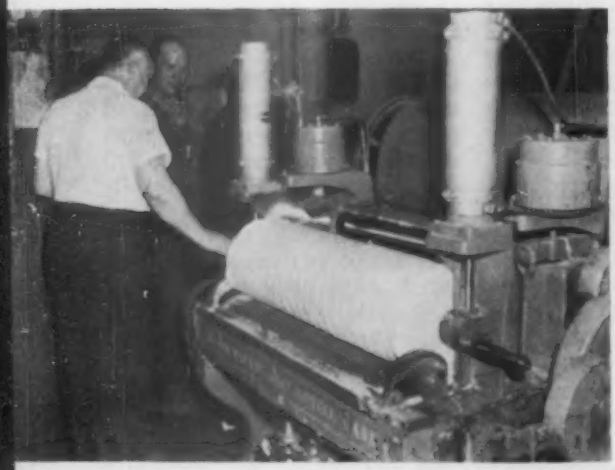
Dalton's $1.8-million investment in modernization is now paying off with a handsome 25% increase in machine and manhour efficiency, with a good prospect of recovering cash outlay in 7 to 8 years. Production is up from 98,000 to 105,000 pounds per week.

The Dalton plant in many respects is similar to the Tallapoosa operation. Both mills spin high-grade thread yarn, and most of the improvements have been made in the same general manufacturing areas.

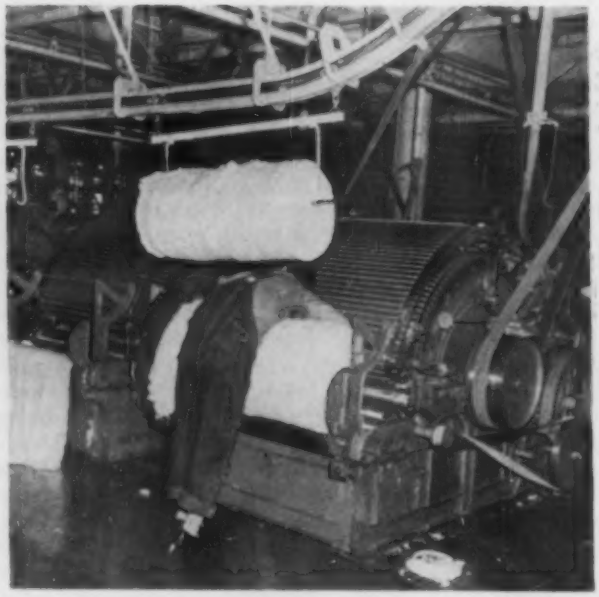
The chief difference is that Dalton has put more emphasis on the installation of mechanical conveyors because of heavier and longer laps now being produced. Also, the layouts of the two plants differ so that in some departments longer hauls are necessary at Dalton. Another big difference is in the operation of the equipment. Speeds and settings vary considerably because of the difference in stock run and numbers made.

Dalton turns out two-and three-ply 16s to 45s combed and carded thread yarn. This yarn is made from SLM $1\frac{3}{32}$-in. Acala cotton. Ninety bales are laid down, and feeding is from 30 bales. Three opening lines produce about 2,000 pounds of stock per hour.

The Impact of $3-Million: Higher Quality,



PICKER LAP, being inspected by Manager J. D. King (left), is 91 yards long and weighs 76 pounds.



LAP CONVEYOR between the card room and picker room has resulted in a 17% manhour-production increase.

NEW 16x42 DRAWING CAN (contrasted with old can) holds 40 pounds of stock. With higher speed, manhour production increased 33 1/3%.

COMBER LAP CONVEYOR over rebuilt combers has cut handling cost substantially. Lap shown here weighs 28 pounds.

HOW 4 MILLS DO THE WORK OF 6

. . . *Begins on page* 54

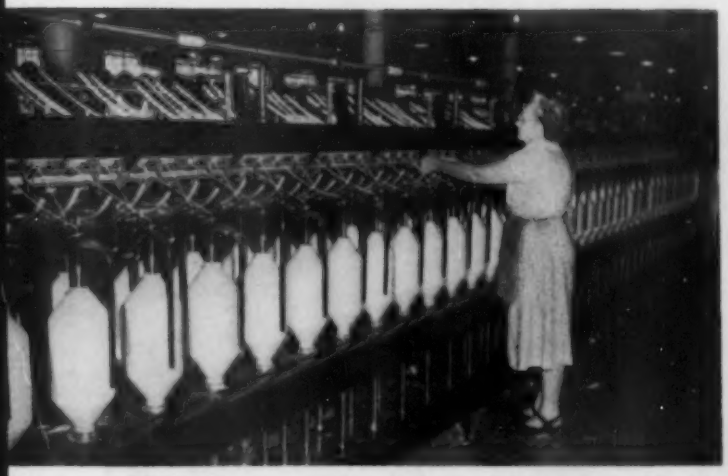
This stock goes to six single-process pickers that have been beefed up with pneumatic lap controls that permit construction of a 91-yd. lap weighing 76 pounds. Previous laps were only 53 yards long. This increased lap size plus 10% faster picker speeds resulted in a 33⅓% increase in manhour production.

All but one of the pickers have three beaters. A porcupine beater in the back runs 840 rpm. A two-blade middle beater runs 1,000 rpm. A Kirschner beater in front runs 1,100 rpm. The two-beater machine has a blade beater in the back that runs 1,075 rpm. and a Kirschner beater in front that runs 625 rpm.

Changing over to heavier laps presented a handling problem, which was solved by installing a 1,400-ft. American MonoRail lap conveyor. Result: A 17% increase in manhour production for the card room.

Carding cost was greatly improved by changing flat speeds from 4 to 2 inches per minute and speeding up production from 6 to 7½

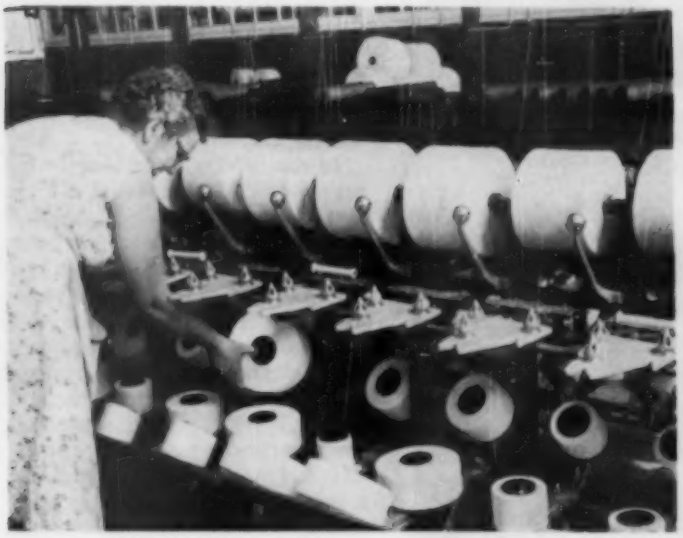
Brighter Work Areas, Lower Costs—Everywhere

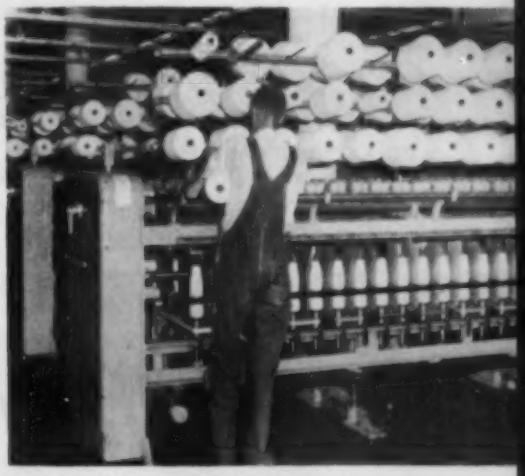


ROVING QUALITY has greatly improved by the installation of six new 13½x7 frames. Package size is 84 oz. Four more will go in later.

SPINNING FRAMES—80 Piedmont Units—have greatly increased efficiency in this department. Production is up approximately 10%.

DOUBLER CREELS have been modified so that the operator literally "pitches" cheeses into place.





WET TWISTERS (76 Meadows units) have increased manhour production 50% in this department due to higher speed, increased package size.

pounds per hour. Fiber saved by this change is valued at $30,000 per year, and it was possible to release 55 cards for transfer to the Tallapoosa plant. Manhour production has been increased 33⅓%.

Twenty-seven precombing drawing frames were replaced with 10 new Versamatic frames. The 40 deliveries run 412 fpm. and put 40 pounds of stock in 16x42 cans. The old frames ran 145 fpm. and put 13 pounds in the 12x36 cans. This improvement resulted in a 33⅓% increase in manhour production.

Big 16x42 coilers were added to the 25 Saco-Lowell combers, and a Cableway lap conveyor was installed over them to handle the 28-lb. laps. The laps are made on six Saco-Lowell lappers, 20 ends up. These changes resulted in a 20% increase in efficiency and a $2,000-per-year saving in handling costs.

Finisher drawing comes after combing. Here, 24 two-process frames with 108 deliveries running 142 fpm. were replaced with six Versamatic one-process frames having 24 deliveries. The new frames run 310 fpm. and put 38.5 pounds of 75-grain stock in 16x42 cans. This change increased efficiency 25% and removed one operation.

At roving, 14 10x5 frames were replaced with six new 13½x7 Saco-

Lowell frames that produce an 84-oz. package. The old frames made a 28-oz. package. Efficiency increased 20% in this department.

SPINNING—A SHOWPLACE

The spinning room is the showplace of the mill. Here, 80 single-creeled 312-spindle Piedmont frames have replaced 100 old frames with an expected productivity increase of 40%, which will include a boost in capacity of 7,000 pounds per week. The 27-in. frames are installed five to each bay.

"The new frames are performing beautifully," says Superintendent J. D. King. "Ends down run from 25 to 30 per thousand spindle hours, and we expect to get them down to less than 20 before long. We've had a 2% increase in breaking strength; evenness is better."

The frames have 2-in. rings and are spinning 30s to 39s from 0.90-hk. roving. Spindle speed is 10,500 rpm., front-roll speed 147 to 182 rpm., average draft 40, and twist multiplier 3.60. Cleaning cycle has been cut 50% with the aid of Parks-Cramer frame cleaners. Floor sweepers are being installed in the outside alleys of the spinning room.

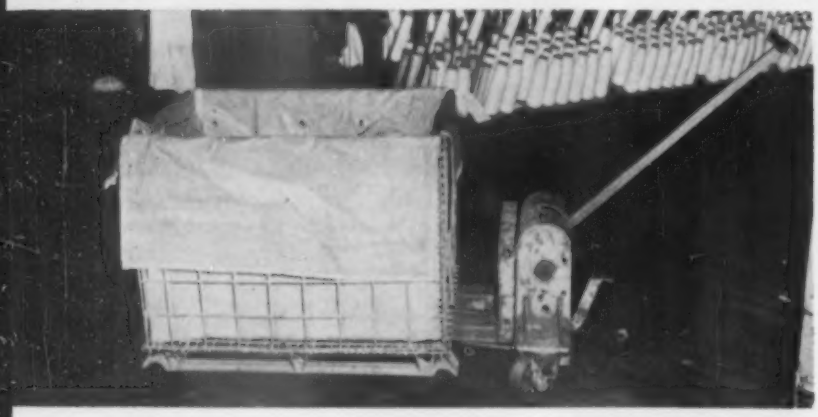
Plans are underway to modernize 57 additional frames by adding Whitin STA drafting, Pneumafil creels, antifriction spindles, Meadows cylinder conversion, and Spinsavac waste collectors. This work will be completed by the middle of next year.

Spoolers have been modified so as to wind off 2x8-in. paper bobbins instead of 1¾x7-in. wooden bobbins, and package weight was increased from 1.55 to 2.70 pounds. Winding speed has been upped to 1,400 yards per minute.

An American MonoRail frame-and-floor cleaner mounted over the doublers has reduced cleaning time 33⅓%. The doublers make a 7-in., 7-lb. package and run 400 yards per minute. Creels have been modified to hold three packages of spooler cheeses.

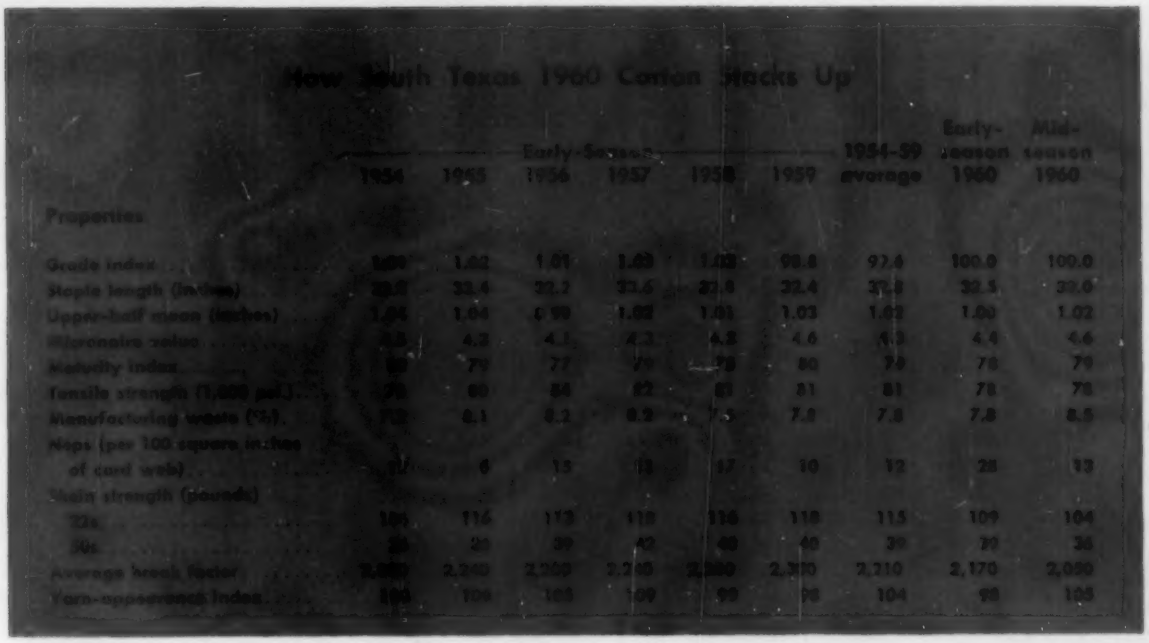
In the twisting department there are 76 4x10 Meadows wet twisters that have a total of 17,660 spindles. Installation of these machines made it possible to increase package size from 12 to 24 ounces. Larger packages are designed to coincide with the knotless dye-spring packages made at Dalton. The twisters are equipped with nylon travelers and run at 7,200 rpm. They use ball bearings throughout and have stainless-steel water troughs and dip rolls. Installation of these machines resulted in a 50% increase in man-hour production.

Foster 102 and 101 winders are used to make 24-oz. dye-spring and 4½-lb. cone packages. Each operator runs 200 spindles on a multiplicity of numbers. Creels have been modified so that pin boards can be placed directly to the machine. Collapsible Cargotainers are filled from the top of the winder so that no second handling is necessary. These containers go into trucks for shipment to the plant at Sevier, N. C.



COLLAPSIBLE CARGOTAINERS containing yarn go by truck to the finishing plant at Sevier, N. C. Empty containers are folded and returned.

LIFT TRUCK (hand-operated) virtually "floats" cones from winders to shipping dock. Note special winder creel.



How South Texas 1960 Cotton Stacks Up

Properties	1954	1955	Early-Season 1956	1957	1958	1959	1954-59 average	Early-season 1960	Mid-season 1960
Grade index	1.00	1.02	1.01	1.03	1.03	98.8	97.6	100.0	100.0
Staple length (inches)	32.0	32.4	32.2	32.6	32.8	32.4	32.4	32.5	32.6
Upper-half mean (inches)	1.04	1.04	0.99	1.02	1.01	1.03	1.02	1.00	1.02
Micronaire value	4.3	4.3	4.1	4.2	4.3	4.6	4.3	4.4	4.6
Maturity index	80	79	77	79	78	80	79	78	79
Tensile strength (1,000 psi)	86	86	84	82	81	81	81	78	78
Manufacturing waste (%)	8.2	8.1	8.2	8.2	7.9	7.8	7.8	7.8	8.5
Neps (per 100 square inches of card web)	21/	6	15	18	17	10	12	28	13
Skein strength (pounds)									
22s	120	116	113	119	116	118	115	109	104
30s	38	35	39	42	40	40	39	39	36
Average break factor	2,500	2,540	2,550	2,760	2,660	2,710	2,710	2,170	2,050
Yarn-appearance index	100	106	105	109	99	98	104	99	105

FIBER PROPERTIES for South Texas cotton are off in several areas, compared both with last year's crop and the six-year average. Grade and staple held up well, however, in spite of bad weather conditions.

South Texas Cotton: Not Bad

Bad weather caused deterioration of some properties in early-season cotton, but grade and staple are average. Later pickings showed improvement. Here's what mills can expect of fiber from this area.

THE SOUTH TEXAS COTTON crop got off to a good start last spring. For a time it looked like a banner year—high yields and good quality. But drought plagued growth during June. Rains came in abundance during July, but it was too late for the most part to fruit the kind of blossoms that produce fully developed bolls. Early prospects were pretty dismal.

But the outlook is somewhat brighter now that the results of the Agriculture Department's tests (see table, above) have been made public. Mills will find cotton from this area for the most part to be of reasonably fair quality compared with the six-year average, but generally poorer than last year's crop. Grades held up beyond expectation, and other properties—except neppiness and strength—are not too bad. Late pickings showed improvement.

Here's a quick run-down on what you can expect from this cotton:

• **Grade**—Better than last year's crop and the six-year average.

• **Staple length**—Slightly shorter than average but better than last year.

• **Upper-half mean**—Off on early-season pickings; picked up later.

• **Micronaire values** — A little higher than average, about the same as last year.

• **Maturity and tensile strength**—Below average; both properties leave much to be desired.

• **Picker and card waste**—About average, the same as last year.

• **Neps**—Very high (28) for the early-season cotton; improved greatly as the season progressed.

• **Yarn strength**—Lower than last year and slightly under the average.

• **Break factor** — Considerably lower than last year and under the average.

• **Yarn appearance**—Off for early-season cotton, but better than average for later pickings.

By F. L. GERDES
Cotton Technologist
U. S. Department of Agriculture, Retired
Leland, Miss.

MANAGEMENT TEAM discusses New Products and Future Growth. Left to right are: Gibson LaFoy, president and treasurer; J. Ralph Hart, vice-president (operations); James Haynes, sales manager; and A. C. Bechler, vice-president (Nova Products).

Small Mill in a Hurry:

West Georgia Mills, Inc., Whitesburg, Ga., operated on a hand-to-mouth basis for 10 years under another name. Then three years ago it was reorganized—and things began jumping. Sales rocketed from $800,000 to $1.7 million. Here's how.

PRODUCTION AND SALES double in three years. Plant expands from 10,000 to 60,000 square feet. Company reorganizes and refinances. Four new divisions form. Mediocre operation transforms into an aggressive, growing business. In a nutshell, that's the story of West Georgia Mills, Inc., Whitesburg, Ga.

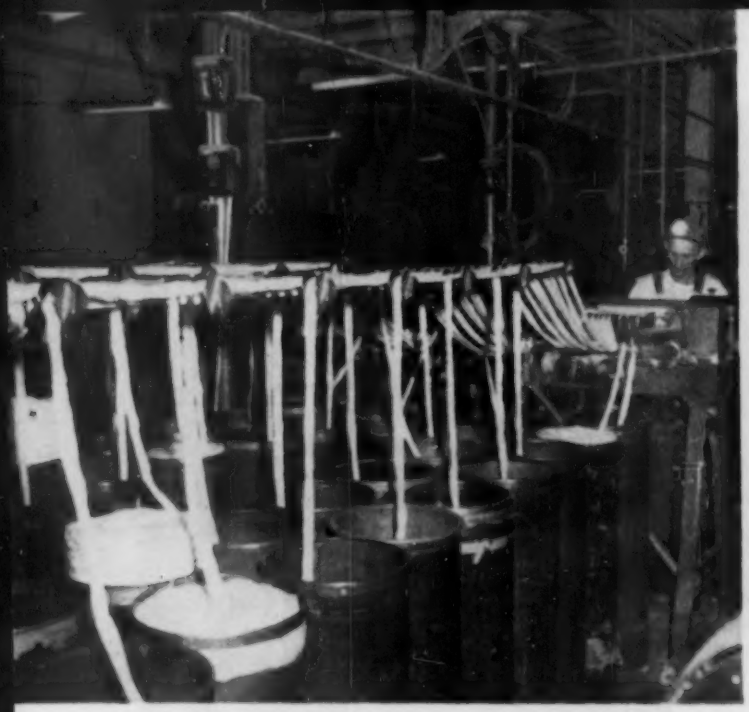
What suddenly put the spurs to a small cordage mill that had been stumbling along in an indifferent fashion for 10 years? How did it suddenly become one of the most successful braiding operations for its size in the industry? To answer these questions it's necessary to take a look at the company's beginnings and background.

Back in 1947 the small town of Whitesburg, with a population of 450, was drying up economically. The Chamber of Commerce, desperate, persuaded a local financier to establish a small braiding mill in a long-empty building. Gibson LaFoy, president and treasurer of the present company—but then a banker—was put in charge of organizing and setting up the operation. He was given $40,000 working capital, a handful of antique braiders, and some odd lots of yarn. Some $10,000 of the original capital went into the building, complete with leaky roof. The company was named Virginia Mfg. Co., Inc.

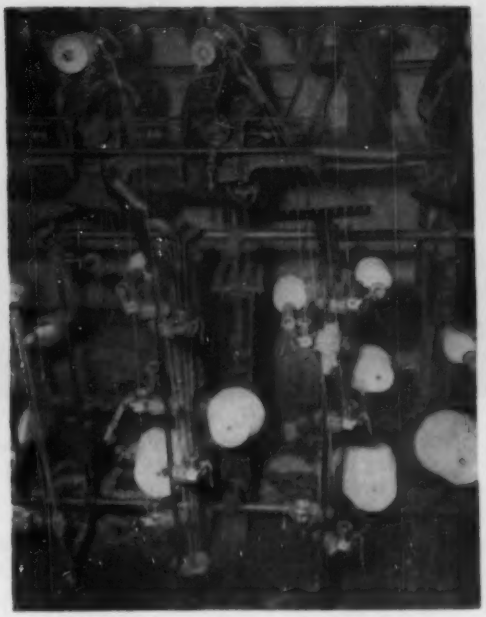
FIRST PROFIT—NIL

First year's sales—$230,000. Profit—nothing. For two or three years LaFoy wasn't sure most of the time whether or not the company

. . . *Turn the page*



TEN ENDS UP at drawing gives an evener, stronger cotton yarn than can be made with fewer ends up.

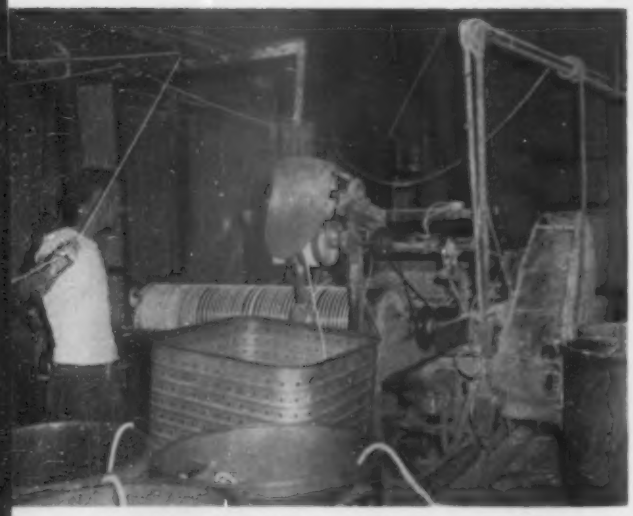


MULTIPLE-END WINDING makes it possible to produce over 50 different kinds of yarn on 52 spindles.

Doubles Sales in 3 Years

BUTT BRAIDERS handle anything from 210- to 30,000-den. single-man-made fibers.

WARDWELL BRAIDERS have a special attachment that makes it possible to produce a one-up, one-down cord with 16 carriers.



COTTON CORDAGE is bonded and polished at this operation to improve its appearance and abrasion resistance.

MILL-MADE TESTER raises and lowers Venetian blind 25,000 times or until the cord gives way.

SMALL MILL IN A HURRY

. . . *Begins on page* 62

was solvent. Products consisted of two or three types of Venetian-blind cords.

During this uncertain period, LaFoy built up a strong staff who are still with him as officers in the new West Georgia Mills. They are J. Ralph Hart, vice president, A. C. Bechler, vice-president, and N. G. Arnold, secretary.

This group held together the shaky organization until 1957, when they decided that something drastic had to be done. Otherwise they would soon be out of business. Sales amounted to about $800,000, but profits were still negligible.

ORGANIZING FRESH

The first thing they did was to buy out the majority stock holder who took no active part in management. Money for this purpose came from issuing $175,000 worth of $10 par stock for a new corporation, West Georgia Mills, Inc. All of the stock was sold in Carroll County. Company employees themselves bought quite a bit of it. In fact, 70% of the 135 employees are stockholders in the company today.

With financing under control, the management began an intensive expansion, modernization, and sales program. At the same time, four separate operating divisions were organized by management. They are:

Fidelity Braids—Manufactures a broad line of cotton and man-made-fiber braided cordage for resale in bulk.

Nova Products—Produces and distributes braided-cord packaged specialties such as motor-starter cords, jump ropes, and Venetian-blind repair kits.

Virginia Yarns—Cotton-spinning unit. Supplies Fidelity Braids with 4s cotton yarn at present. Coming soon: more expansion.

Chattahoochee Realty Corp.—Purchases all real estate and manages the 10 building units now owned or rented by West Georgia.

The reborn mill was off to a flying start. Floor space was expanded to 60,000 square feet by buying or renting buildings up and down the main street of Whitesburg. The company took over the old railroad station among other miscellaneous constructions. In some instances, open spaces between buildings were boarded up and ramps were built.

During this helter-skelter period of expansion, much new and improved equipment was installed. The opening room in the cotton mill was modernized. Hundreds of additional braiders were put to work.

The company now operates over 500 braiders, of which 390 are 16-carrier New England Butt; 40 are 20-carrier New England Butt; 10 are 32-carrier New England Butt; 51 are 16-carrier Wardwell; and 19 are 12-carrier solid New England Butt. About 20% are new.

AND NOW—HIGH CAPACITY

Result of all this effort? West Georgia is now turning out 2.4-million yards—1,363 miles—of cordage every 120 hours. Sales last year were $1.7-million, including $700,000 from the Nova Division—twice the 1957 figure. Over 2,500 different types and sizes of cord are made, ranging from the original Venetian-blind cords to nylon and polyethylene marine cordage.

"But this is just the beginning," says President LaFoy. "We plan to consolidate our present braiding operation some time in the future in a streamlined lower-cost modern plant with provision for adding more braiders to the 500 we now operate.

"The present main building will then be assigned to Virginia Yarns for an expanded spinning operation. Production here is expected to be 40,000 pounds per week, consisting of 3s, 5s, 6s, 8s, and possibly 12s. Purpose will be to serve Fidelity

Braids more fully and to achieve minimum costs through a balanced operation."

LaFoy adds, "our Nova Products Division has been successful enough so that we plan to incorporate it into a separate company. It will have its own integrated management and sales forces. Nova did $700,000 worth of business last year, but the potential appears unlimited. It wouldn't surprise me to see this figure increase several fold once we recruit adequate personnel."

At present, West Georgia has some 80 commissioned sales representatives scattered all over the map. These salesmen are backed up with advertising in five national business journals going to manufacturers of Venetian blinds, canvas products, toys and novelties, hardware, boats, and marine supplies. Other sales tools include direct mail, samples, newspaper ads, trade shows, and visits to the mill for instructions.

An interesting angle of the sales approach is that salesmen are forbidden to join in a "wake" with a customer over slow delivery by the mill. The salesmen are directed to solicit orders one month in advance for three months' requirements. Reason: Each cord item is best produced on one type of braider, and new orders for items not in stock must wait their turn against the backlog of orders ahead for each type of braider.

About half of West Georgia's production is made according to rigid customer specifications. One of the big customers is the United States Government, which buys some 200 different kinds and sizes of cord. All specifications as to diameter are worked out in thousandths of an inch; and except in the very light or hollow-braided cords, diameters are guaranteed within a tolerance of 0.003 inch.

KEEPING QUALITY HIGH

In order to meet these rigid specifications, the company has a quality-control laboratory with two full-time operators directed personally by President LaFoy. He handles all quality complaints himself. There are two special testing machines designed by the company in the laboratory. These machines automatically pull Venetian-blind and traverse-drapery cords in cycles (up and down or back and forth) until the cord breaks or until it stands up to the equivalent of many years of normal usage. Premium standard for Venetian blinds is 25,000 cycles; traverse cords must hold up for 100,000 cycles.

West Georgia makes round braids —either the hollow type that can be easily spliced with the use of a fid, or the core type that can be reinforced with cotton, paper, glass fiber, or any kind of man-made yarn. In addition, the company produces solid braid in nylon and cotton. Sheathing construction runs from a single end up to about eight parallel ends per carrier on 8, 10, 16, 20, or 32 carrier constructions. Other types of cordage manufactured include single and plied constructions and braids around solid cores. The mill can supply anything from 50-yd. spools to 10,000-yd. reels promptly.

Typical of the unusual orders often received was one for a ski tow into which had to be braided an electric wire for the transmission of messages from a walkie-talkie between a skier and the tow operator. Another weird one was an order for two reels of cordage "exactly one mile long and with no knots or defects." The customer refused to give any indication of the end use. Management is still scratching its head over that one.

Getting around to the mechanics of production, West Georgia produces its own cotton yarn in a miniature but complete spinning mill located in one end of the rambling string of buildings.

PRODUCTION STEP BY STEP

The opening room is quite modern. A blending feeder in the line refeeds one third of the cotton in the hopper for better cleaning and mixing. On the average, 600 pounds per hour are fed and about 400 pounds pass on through the other cleaners to a "pepper shaker" type of cleaner that takes out most of the fine leaf and trash.

After the cotton is opened and cleaned, it goes to a one-process picker that makes a 52-yd., 15.4-oz. lap weighing 50 pounds net. The picker has a return-air filter, so no dust room is required.

The mill has 10 cards producing 19½ pounds of 70-grain sliver per hour. Cards are equipped with continuous strippers, and cylinders run 175 rpm.

Drawing is a little unusual in that it is 10 ends up. This arrangement is said to improve evenness. The two one-process frames have Ideal change-overs. A 70-grain sliver is made.

There are two roving frames. One produces 12 x 6 packages for the spinning frames. The other makes a 9 x 4½ hard-twist package of core filler.

Four cotton-system and one woolen-system spinning frames make 4s yarn. The cotton-system frames have 2⅝-in. rings, and the bobbins go to an Abbott winder. The woolen frame has 3-in. rings and makes 10-in. bobbins that go to Universal No. 50 winders.

The winding operation is somewhat unusual because of the widely varying types of yarn wound on the same machines. By running multiple ends, the mill produces over 50 different kinds of yarn on a total of 52 spindles.

Packages vary also to suit the different kinds of braiders. For example, from 210- to 30,000-den. nylon is made into single-end packages. Packages for the Wardwell braiders have a tied end to make the stop motion work. A double-head spool is used for polyethylene and other man-made fibers to keep the yarn from slipping.

There's nothing particularly unique about the braiding operation except that at times there are as many as 150 different yarn combinations and colors in process at once. The Wardwell machines have special deflectors that permit production of a one-up, one-down braid on a 16-carrier machine. Formers are set within 0.005 inch of the diameter of cord to be made somewhat closer than average.

Most of the man-made-fiber cordage receives no finishing treatment. Cotton cordage, however, is put through a bonding and polishing solution to improve its appearance. All cordage is inspected by eye and by hand as it is spooled or reeled, and regular tests are made in the quality-control laboratory for strength, construction, diameter, and appearance. Final step is to pack and ship the finished cordage to every state in the Union and to many foreign countries.

How to Check Your Mill for

UNSAFE CONDITIONS

Equipment

- Check all hand and power trucks for weakened frames, bent wheel rims, handles, proper lubrication, knuckle guards, brakes, and horns. (Vehicles are connected with 7.1% of plant accidents, National Safety Council figures show.)
- See that ladders do not have broken steps or split side pieces. Make sure spreaders on stepladders operate correctly. Do not allow make-shift arrangements. (One of every five accidents involves a fall.)
- Inspect cables, hooks, clamps on all cranes, belts on conveyors.
- Eliminate sharp edges on machines. (Almost 800 people were hurt by machinery in textile mills in 1959.)
- See that all potentially dangerous machinery is properly guarded and that guards already installed are in place.
- Check all tools for tight, uncracked handles, sharp teeth, cleanliness, and no chipped edges. (Over 6% of all work accidents involved hand tools.)
- Most important, condemn all defective and semi-defective equipment immediately.

Building

- Correct defects in flooring—holes in concrete or linoleum, loose or splintered boards.
- Clean up all oil or water on floor. (This is another cause of the large number of fall accidents.)
- Insulate pipes on which condensation forms.
- Provide stairways with firm handrails, treads on steps, and the proper lighting. (More fall trouble here.)
- Provide elevator gates that work efficiently.
- Put down adhesive substances on slippery or well-worn floor areas.
- Place protective railings on platforms and catwalks.

Electrical

- Replace frayed or damaged extension cords and loose plugs. (Electrical equipment was connected with 2.5% of last year's accidents.)
- Ground all tools and machines.
- Eliminate sticking switches.
- Keep fuse boxes closed.
- Eliminate any dampness around open switches or switch boxes.

Fire

- Make certain there are enough extinguishers to have one available for any emergency. Keep each one clean and charged. Clearly mark location of all equipment and make sure employees know where everything is. Keep sand, water pails full. Put a notice on all caustic-soda extinguishers, which says that they should not be used on electrical fires. Most important, keep area around equipment uncluttered.
- Keep sprinklers clean and clear of obstruction.
- Make sure closets and areas behind machinery are kept clean.
- Provide facilities for prompt disposal of oily rags.

First Aid

- Keep first-aid kits available and well-stocked.
- Check your medical department regularly for preventive and corrective medicines and procedures.

Obstructions

- Keep aisles clear. A good idea is to paint lines along areas to be kept open.
- Provide convenient storage areas for trucks, tools, furniture, cleaning equipment, and ladders.
- Mark exits and keep them clear. Do not allow storage in stairwells.
- Provide racks for empty soda and milk bottles.
- Provide enough scrap baskets. (Over 500 people were disabled in textile operation in 1959 by stepping on loose objects.)

Storage

- Provide enough aisle and work space and proper equipment to insure safe stacking and procurement of supplies.
- Provide adequate space for the amount of material you wish to keep. (Over 13% of those 7,700 accidents last year came from people being hit by falling objects.)

Material Handling

- Plan your operation so that cranes and overhead conveyors do not cross the work areas.
- Arrange routes for your handling equipment to avoid personnel and tight squeezes.

Clothing

- Do not allow loose clothing around machinery.
- Make sure workers have proper clothes for jobs. (Almost 250 people were severely injured in mills last year because they did not have proper clothing.)

UNSAFE ACTS

These are much tougher to control because you can't be there over the worker's shoulder every minute. But you may be able to keep the safety program in his mind every minute.

Here are things you can do:

1 Emphasize the safety program by giving the wholehearted support of your management, from the highest level on down. Your employees must feel that safety is important.

2 Continually re-emphasize the program by holding periodic reviews of safety procedures and evaluating their effectiveness.

3 Make sure no employee, from president to stockboy—but especially the foremen, supervisors, and operating heads—ever feels that he is relieved of his responsibility for safety.

4 Encourage employees to report hazardous equipment, conditions,

and practices and correct them.

Beyond this you can bring the most common dangerous acts to the attention of your employees and make continual checks to see that these acts are not being committed. Most unsafe acts involve some attempt at short-cutting by using improper techniques. Here is a Safety Check Chart of frequent faults.

- Working under improper or incomplete instruction in a job.
- Hitching rides on trucks.
- Stacking goods too high in the stock room, on trucks, fork-lift pallets, or conveyor belts.
- Overloading elevators.
- Failure to use safety devices.
- Working at unsafe speeds and — especially — running instead of walking and driving vehicles at excessive speeds.
- Using the incorrect tool.
- Littering.
- Lifting objects beyond capacity or using improper lifting techniques (you lift by bending at the knees).

Now all you need is a positive attitude: Accidents can be stopped. It's been proved they can in the textile industry because the two best safety records in the country are held by textile plants—the Du Pont man-made-fiber plant at Chattanooga, with 31-million injury-free man-hours, and the Chemstrand nylon plant at Pensacola with 22-million.

It is true the silk and man-made-fiber parts of the industry have the best safety records (woolens and worsteds, dyeing and finishing, carpets and rugs have worse ones). But it is not just their particular type of operation that makes them so safe. A large percentage of accidents happen in the preparation, maintenance, and packing and shipping operations common to all plants. These companies simply have good safety programs. The Safety Check Charts will help you to have a good program, too. You can't afford not to have one.

Easy Way to Save $3,000

That's about what it costs you each time there's a disabling accident in a textile mill. What can you do about it? Scan the checklists (left) for tips on making your mill safer—and act now.

THE TEXTILE industry gave itself a $24,000,000 "holiday" last year that commemorated nothing but misery, neglect, and lost income.

This "vacation" wasn't planned. It came through the accumulation of accidents—over 7,700 of them—that cost the industry working time equivalent to shutting down every textile plant in America for an entire day.

Statistically, this was expressed by the fact that in 1959 the industry had 4.34 disabling accidents and lost 347 man-days for every million man-hours worked. A million man-hours may sound like a lot, but if your operation has a total of 500 employees (in the office and on all shifts) you accumulate a million man-hours in just one year.

What does this mean in the form of costs to you?

The average disabling accident in the textile field, defined as one that does not allow the worker to return the next day, entails about $800 in wage compensation. Yet this is only one-quarter of the

By Ernest W. Fair, Management Consultant, Boulder, Colorado

cost. There are other directly connected expenses—medical bills and insurance—plus replacement of damaged equipment and materials.

The most important costs are the hidden costs you can't tabulate. But they make your plant just so much less profitable at year end—the production delays and the time lost by other workers helping their fellow and discussing the accident (this accounts for almost five times as many lost hours as the injured man).

COUNTING THE COST

The total average cost per disabling accident then is over $3,000. If you have 125 employees you can expect one disabling accident every year; 500 employees, and you will average more than four; 1,000, and you will average nine a year.

Even the small mill can't escape the power of these figures. Because small plants don't have specialized safety departments or spend enough money for safety programs, their accident rate is three times as high as that of large operations. What's more, these figures do not take account of the thousands of minor accidents that also can cut back production and profits.

What can you do to eliminate accidents? First job: Do some fresh thinking about what constitutes a safety program. Most of the old warnings on safety—eliminating bad lighting, cutting out horseplay, and fencing in unguarded machinery—have had their effect. Today these items cause less than 0.5% of work accidents.

Broadly, causes of accidents can be divided into those involving unsafe acts and those involving unsafe conditions. Most accidents include both to some degree, but you have to correct each in a distinct way. The first you attack indirectly, the latter you go after now.

On pages 66 and 67 are two Safety Check Charts. One gives steps for eliminating hazardous conditions, the other lists the different procedures needed to curb dangerous acts. Use them as guides for periodic inspections and they will save you thousands of dollars a year.

Safety Leaders—1959: Best No-Injury Records

	Man-hours without disabling accident
Carpets and Rugs:	
Collins & Aikman Corp., Philadelphia, Pa.	5,135,346
Cord and Twine:	
Martha Mills, Thomaston, Ga.	15,133,453
Cotton Textile Mills:	
Trion Company, Trion, Ga.	10,495,544
Dyeing and Finishing:	
Sayles Biltmore Bleacheries, Biltmore, N.C.	6,353,269
Knitting Mills:	
Hanes Hosiery Mills, Co., Winston-Salem, N.C.	4,154,444
Silk & Man-Made-Fiber Textile Plants:	
Chemstrand Nylon Plant, Pensacola, Fla.	22,748,104
Woolens and Worsted:	
Forstman Woolen Co., Passaic, N.J.	13,624,000

Source: Accident Rates, 1960
National Safety Council

Quality Control, Fall 1960: Latest (and Best) Ideas

Here's quality as they discussed it at the Clemson College meeting in September. Highlights of the 2-day meeting? Here they are.

How Quality Control Pays Its Way in the Mill

QUALITY CONTROL'S primary responsibilities are to keep control over materials in process and to judge and prejudge materials, methods, and equipment. But does quality control pay its way? The answer is an unqualified "yes."

In the early 1930's, for example, a mill averaged 1,152 doublings. Today, 64. Why? Because today quality control measures operations constantly to keep errors down. Mistakes are no longer blended.

Wages since the mid-1930's have increased 200%, but the labor cost for 80-square print cloth has gone up only 50%. Today a mill probably could produce print cloth at 13¢ per pound if profits allowed adequate capital investment. And much of the credit goes to quality control.

What else has quality control contributed to the industry? For one thing, it has exerted great outside influence on many areas of research. We know more about cotton and other fibers than ever before. We have developed numerous new and improved testing instruments and productive machinery for mill use.

These and other factors directly traceable to quality control have helped make cost reductions possible without lowering quality of end products. Such progress could not have been made by supervisory personnel. It had to be done by someone trained in the use of testing equipment and technique.

Another contribution concerns in-process inventory. It is lower today than in the 1930's, and the flow of cotton is much more rapid. Quality control has made this condition possible by constantly policing quality at every step in the manufacturing processes.

These facts alone prove that quality control is paying its way. But this is just the beginning. New ideas are developed by demand, and quality control is the agency to do the demanding. Many challenges lie ahead. Here are three:

Challenge 1—Mother Nature does not produce blended cotton fibers. Mills are getting fairly good bulk blending today, but not fiber blending. The industry needs better methods and equipment for blending cotton fiber from bale to bale and fiber to fiber. Demand it.

Challenge 2—Think of satellites that are sent into orbit and the metal that re-enters the atmosphere at thousands of miles per hour without burning up. Compare this with the traveler that orbits around the spinning ring. When it runs much faster than a mile a minute it burns up. Why should it? Metals are available that don't burn up at high speeds and friction. Demand better travelers.

Challenge 3—Textile machinery in most instances is the same as it was many years ago. Manufacturers' imaginations seem to be blocked. But some progress is being made. Breakthroughs, for example, appear to be a simplified automatic doffer from Spain and Saco-Lowell's new roving spindle. Here basic principles have been applied, imaginations have been unblocked. Demand new, simple machinery. That's your job.

From a paper presented by W. M. Pittendreigh, Riegel Textile Corp.

Putting Quality Control to Work 3 Ways for Top Results

At Joanna Cotton Mills, the quality-control department and supervisory staff work as a group. Here are some specific examples of what the team has done:

JOB 1: STANDARDIZING

Some time ago, the supervisory group was told by the quality-control department that "within CV" on cards was very good—but "over-all CV" was very bad. Picker-lap CV was quite adequate; therefore there should have been only a minimum deterioration at the cards. But there was trouble. Ordinary defectives such as bent lap pins, bad lap run-outs, chokes in gears, bad gears, bad lapping, and other abnormalities were soon cleared. Yet there was no appreciable CV reduction.

The quality-control people then ran a series of checks and came up with the answer. They found that over the years the mill had been adding more and more cards, all of the same make but different models. It was pointed out that the five lots of cards each had a different draft gearing. Although each card was making an even, high-grade sliver, the sliver was being made to five different standards.

The task then was to make one standard where previously five had existed. This meant drawing up a draft-gearing plan of each model, deciding on which one to use, and

then starting an all-out program to cull out nonstandard gears and replace them with approved gears. This program was a long drawn-out affair, but it finally succeeded in lowering card CV substantially.

This disclosure prompted a keen look at all carding and spinning units —and we found and fixed some strange gear combinations. Additionally, we checked weights on drafting rolls to be sure that the weight was applied identically throughout any given process.

JOB 2: COMMUNICATING

The next step was to establish a formal "notice of machine-change plan." Any time a machine is changed, a formal notice is sent to quality control so that this department at all times knows what gear is on what frame and whether or not it is right. This rule is enforced rigidly.

While engaged in the card program, it was found that a large number of card lap-rest rolls were in poor shape. Consequently, tests were set up for three rolls, one with a 6-in.-dia. roll, one $\frac{1}{16}$ inch under, and a third $\frac{1}{16}$ inch over. Full-scale CV checks were run on each card, and the roll having a diameter of $5\frac{1}{8}$ inches gave the lowest CV.

To turn out rolls of such exact size for over 300 cards is quite expensive, but we decided to go ahead and do it. We cut cost a great deal by buying good-quality loom-beam barrels, turning the journals down to correct size, and then wrapping and cementing layers of drapery cloth tightly over the wooden surface. The coated roll was then varnished, allowed to dry, checked for exact size, and installed. This was done over five years ago, and the mill hasn't lost a roll between then and now.

The quality-control department may not always have the answer to your trouble, but it should have no difficulty in spotting trouble where it exists. For instance, Joanna had a very high nonuniformity at one of its four-delivery drawing units. No matter what was done about setting rolls, cleaning gears, lubrication, and examination of its components —nothing did any good. Then we got a gear-eccentricity tester, and with the aid of this device it was possible to spot gears having eccentricity. It was not surprising to find at least two gears having more than 0.015-in. run-out. There were several gears having from 0.005- to 0.012-in. run-out and gears with egg-shaped and loose bores. All gears having a total indicated run-out of more than 0.0035 inch were junked and replaced with gears of approved hardness and run-out.

JOB 3: ORGANIZING

Next step was to go through the gear inventory and junk any gear not meeting approved specifications. The purchasing department then set up a program of supplying complete sets of gears for each drawing frame by calling in the old gears and issuing approved gears. This work now extends to all new machines purchased. We apply this quality yardstick to every single machine in the plant.

Joanna's quality-control department has a method of calling defective machines to the attention of both mechanical and supervisory employees by wiring a large colored tag to the unit so that it can be seen from any part of the job. The tag plainly states that the machine is making sub-quality work and needs correction. And the tag stays on the machine until the defective condition has been corrected by one of the employees.

To further implement this tag routine, the assistant superintendent came up with a large blackboard listing card-grinding sections by shifts. This board, hung in a conspicuous location in the card room, contains vertical rows of hooks under each grinder section. When a shift has a substandard machine on the job, a large tag goes on the appropriate hook. In this way, all room personnel know what is going on. Supervision and management can see at a glance what sections are in difficulty and what progress is being made toward correcting substandard conditions.

The system also is used effectively on looms to show which ones are failing to make first-quality cloth. Here, the tag plainly shows the major cause of the defect. But with the loom-control plan the tag is not hung on the board for the first roll of seconds; it is put on for only the second or third rolls made. The tag is marked with a large number showing how many successive rolls of second-quality cloth have been taken from this particular loom.

RESULT: TOP QUALITY

This pointing up of loom defects aroused a desire on the part of weave-room personnel to get the word back to preparatory departments about their shortcomings. So now there is a blackboard in the slasher room where a colored tag hangs on the appropriate hook of the shift and machine having made a soft warp, bad selvage, hard size, or any other beam defect. This tag hangs on the board for one week.

In turn, the slasher people desired to get the word back to the warper hands for any warp coming up with bad work. A board was made up and hung in the warper room, and any section team giving trouble on the slashers is shown by slasher supervision to warper supervision on that shift. Bad beam reports then go to the quality-control departments, where they are recorded and passed along to the assistant superintendent, whose responsibility, incidentally, includes the complete supervision of all blackboards.

Other recent quality-control activities at Joanna include:

1. Development of an improved picker-lap weight chart that clearly shows standard weight and upper and lower control line. Pickers have been adjusted so that 96% of the laps now fall within the control area.

2. Establishment of a system to check nonuniformity at cards once a month and at combers and drawing once a week. Units continue to run and complete check requires only about 25 manhours per week.

3. Development of a cloth-testing program in which the first yard of a new construction is cut off the loom and analyzed for imperfections in the laboratory before any appreciable amount of off-standard cloth can be made.

4. Studying slasher-room conditions, which resulted in the elimination of lumping and variation of size put on the yarn. Recommendations called for modifying kettles and improving steam traps.

From a paper presented by J. L. Delany, General Superintendent, Joanna Cotton Mills

The "People" Part of Quality Control—Key to Success

It is said that 85% of all quality problems revolve around human failure. Someone let something get by. Result—a second. Just as simple as that. Eighty-five of every 100 defects in the goods at your plant result from someone doing something wrong.

The controllable items are in hand. The machinery is functioning well, and materials are up to standard. The 15% figure tells us this. But if the 85% figure is valid, then the path that management must take to overcome its quality problems is clear.

MOTIVATING YOUR PEOPLE

There is a personnel axiom that the overwhelming majority of employees want to produce efficiently, want to do the right thing, want to make quality goods. Ask them and they will tell you so. And how often have you run into employees deliberately and maliciously ruining goods? It is a rare, rare exception if ever you have. Yet these are the only ones who can say they don't want to do a good job.

Unfortunately, many employees do not produce well, do not give quality effort. Then why are there so many employees indifferent to quality? Simply because they have not had the proper motivation. Quality motivation results only from adequate communications—intelligence, if you will. Employees need something more than "rote" training, repetitious as so much of our work is. Tell people what's expected of them and why. This is the means of motivation.

The most critical time in this motivation process is the initial phase of an operator's work experience, the probationary period. Here management has the golden opportunity of challenge—the challenge to make this fundamentally sound individual an efficient producer of quality goods: to mold him. This can be done by communications—tell him the rules, tell him why, tell him of the results, tell him again, and keep on telling and teaching. Any supervisor worth his salt spends abnormal amounts of time with the new employee, either personally or through delegation. The result cannot help but be a worker knowledgeable in quality.

TRAINING FOR EXCELLENCE

Not every new employee can be made into an outstanding quality producer. Some few must fall by the wayside for varying reasons. Many will merely be passable. But most successful supervisors do not achieve their excellence by the mere chance that superior employees were assigned to them in the first place. Their people were made; they were taught.

How often have you seen a good, loyal employee laid off or fired because he happened to be that unfortunate first person to offend under a sudden, inflexible, and arbitrary order to "straighten out the department"? He got caught in a web and the supervisor had to tell him, "I'm sorry but I can't make any exceptions. I know you've always done a good job but . . ."

How can this employee help but feel let down, frustrated, or even bitter after all the good and honest work he's done? He is laid off when much poorer producers are allowed to work on. What about the human being affected and his sense of equity here? What about the morale of others around him? Do you suppose they are helped in their general attitude?

Naturally, there are times when you have to make a general tightening up on quality. And of course there are times when you have to put teeth into orders. But how much better if all of this is just not an occasional shot in the blue—but rather a positive, continuing, and dynamic approach to all employees and their requirement to produce only first-quality goods.

KEEPING MORALE HIGH

Next, consider morale. Where there is a department with confusion, lack of a sense of fair play, lack of respect for the individual, or lack of respect for authority, poor morale is usually the problem. And poor morale means poor quality. Morale is such an ephemeral thing. A myriad of little things continually affecting human beings and their attitudes: "It's too hot; it's too cold; the work is spread out too far; layoff; unfair discipline; favoritism; etc., etc."

Morale is not a back-slapping or bright, shining faces, or a big-bowl-of-cherries thing. Anyone who was in the military service knows that the best outfits came only when the command—the management—had developed the necessary leadership and unity of purpose. The best morale was usually when the going got rough, where there was a challenging objective. It is the same in industrial management. Give a group of employees a special meaningful job and they will break their backs to accomplish it. Here is quality control.

One of industry's great fundamental problems is to create within the average employee a sense of belonging to and identity with the impersonal organization for which he works. This, by the way, is the secret of the trade unions' success. They thrive on the promise that they have more interest in the individual worker than the company for which he works. They give a sense of belonging, of identity to the individual. That industry can overcome this problem is apparent by the great number of companies that have done so. These companies provide the means whereby the dignity of the individual can be maintained. Such means include decent wages and working conditions, opportunity for advancement, a certain sense of security, respect, and recognition. These, too, are elements of good quality.

The great diversification of our staff functions often causes us to lose sight of the elementary interrelation of all of our jobs. For example, how often have you made clerks out of your supervisors? Are you flooding them with so much paper work and so many reports that you don't allow them to perform their primary function—organizing and supervising their employees? This is a fault of all of us. We become so enamored of the importance of our own function that our perspective is distorted. We see only personnel or quality

control or industrial engineering. As a result, we demand this and that until our supervisors are staggering under a load of desirable but often unessential detail. And time is wasted in many of the operations.

FITTING MEN TO JOBS

You must constantly assess the quality of the human being as well as the goods he makes. Are proper people being assigned to work as they affect you? Is their educational level proper? Could women be more effective on this job? What about safety and housekeeping? Are the piece rates adequate? Would incentive help or hinder this operation? What about lighting and training? Is the pay structure adverse? And yes, even, is the supervision adequate? This is dangerous ground for a quality-control man, to be sure. But, nevertheless, it is just as important to your end goal as your statistical measurements.

Staff people are very often the poorest supervisors because of their absorption in the technical aspects of their jobs. How many of you are thoroughly familiar with the policies of your company pertaining to human development—the personnel policies? Congratulations if you are. If you are not, develop a sense and knowledge in this direction. It will pay off for you many fold. Skill in motivating people is one of your greatest assets. Just remember that quality production is achieved, not in spite of but because of human beings.

From a paper by Donald M. Burger, Collins & Aikman Corp.

Evaluating Advanced Fibers and Blends for Better Quality

The term "advanced fiber" is used by fiber producers to denote achievement in the development of new fibers for specific uses. This refers to fibers that possess certain physical and chemical properties that will enable products to meet all use requirements when engineered to performance standards.

Before being introduced, new fibers must undergo a series of applied research tests to determine applicability to a particular end use. One phase of application research is the evaluation of processability. In other words, how do they compare in processing quality with similar fibers now being used?

GAGING COHESION

Principal factors in fiber-processability studies and ones that have a significant influence on processing behavior are mass cohesion—fiber-to-fiber cohesion and strength. Cohesion is a relationship of crimp and finish and has a direct effect on drafting quality and product uniformity at the various processing stages. Cohesion is particularly important to some blends. Some fibers blend better than others because the interaction of fiber-surface characteristics and applied finish of one fiber type may result in good cohesion when blended. Other fiber blends may result in extremely poor cohesion and cause unsatisfactory processing performance and nonuniform, low-quality product.

Two fibers, for example, with similar physical properties of tenacity and elongation process well. They have good cohesion and form into high-quality, strong yarns in 100% form; but when blended on a 50-50, 55-45, 60-40 basis, cohesion is low, processing performance is poor, yarn strength is decreased, and a generally unsatisfactory product results.

GUARDING AGAINST FLAWS

There are other problems in this area. Occasionally, the interaction of a fiber and a finish may result in very fine flaking of the fiber. This may leave a deposit on rolls and spinning cots and can cause serious production problems.

Fiber strength is important to the extent that a low-strength fiber may contribute to an over-all poor performance during processing and cause excessive fly from fiber breakage and high ends down at spinning. This weak-fiber characteristic is usually related to weak and poor quality yarns. Results are off-quality fabrics. There are, however, some relatively weak man-made fibers that can be processed satisfactorily by special procedures. In these cases, high strength is not an important requirement in the end product; and the fiber being used for such purposes will usually possess outstanding or appealing properties that enhance the value of the product.

In initiating a fiber-evaluation study involving blends or 100% items, the first phase includes the selection of a manufacturing organization that closely approximates that being used commercially on similar fibers or blends. This means a careful selection of machinery speeds and settings for conventional textile equipment. Changes can be, and usually are, made as the program continues. It is sometimes necessary to process several days at carding, for example, before arriving at optimum speeds and settings for a particular fiber.

When scaled-up processing begins, usually 50 pounds or more, observations are made and recorded at each stage of processing. Laboratory tests are performed on picker laps, slivers, rovings, and yarn to determine amount and effect of such things as lap splitting (low cohesion), card loading (finish), roll lapping (static and finish), and other unfavorable factors. When these problems are solved and satisfactory processing procedures have been worked out, the development of yarn constructions begins with the following:

1. Spinning limits (effect of denier and staple length on yarn number).
2. Optimum-twist levels (effect of twist on number-strgenth).

In determining practical spinning limits for a fiber, tests are begun on the fine side at a point of approximately 10% efficiency and drafts are changed until a practical range is determined. An ends-down study follows in which usually one type drafting system may be studied for several thousand spindle hours. The practical spinning limits for one fiber may differ from another when spun on two different types of drafting systems.

Humidity conditions are varied to determine optimum processing conditions, and control limits can be established and maintained when the fiber-evaluation program is completed.

From a paper presented by G. Dent Mangum, Textile Research Service.

Paying the "Mistake Tax"

Give yourself a systematic way to avoid those costly errors and you'll boost your efficiency as a manager, and create a climate for others that will help your whole department.

IN THE COST-ACCOUNTING sheet of every textile mill there's a large item that never gets written down. It's the "Mistake Tax." It doesn't go to any government. It's levied by you, on yourself, in the form of lots of so-called "careless errors" and "stupid mistakes."

These are the unplanned expenses that make everything you do cost a little more than it should—and in the long run make the difference between a disappointing and a pleasing profit picture.

But the biggest mistake about "stupid mistakes" is the lax attitude that treats them as an unavoidable part of being human. To err is not human and to forgive is not divine—it's just costly. Genius cannot be learned, but how to avoid mistakes can be.

GUARDING AGAINST ERROR

No one is going to keep you from getting married or buying that sporty, but expensive, new car—either of which you may look back on as mistakes. But in your day-to-day work in the mill there are things that can be prevented—like the times you misread the note from the boss or got your report in late. The time you jumped at what looked like a steal in raw materials only to find that you were the one who had been taken.

There are a number of systematic ways of looking both at errors and at their origin. One way, which has been found to be useful by many managers, is to study the man who made the error (you, perhaps) and realize that it could have come from three sources—his body, his emotions, or his mind.

Let's consider the case of George, a production supervisor for Knatty Knitting Co. He may seem to you like an error-prone combination of a sickly body, violent emotions, and under-developed mind. He may seem like your boss. But he may seem to have some of the same troubles that you have.

SIZING UP THE BODY

Taking care of the body doesn't seem very important when you work in a textile mill—very little of your work involves physical exertion. But it is the body's effect on your mental alertness and energy level that's important for you.

Each morning our chemistry, our physical condition is different. It has to do with what we did the night before, how much sleep we got, how much and what kind of food and drink we've been having, the tensions we are under, plus a number of other factors.

This means that we start out each day destined, more or less, to have a good day or a bad one. The best way to avoid physically caused mistakes is to make sure that you are destined for a good day—by taking care of your body, especially on nights before work. The difference between George's top condition and his error-making condition is small—a little tiredness made him less alert than he should have been when he read the boss' note and he missed the point. It was just a slight hangover that took away the energy to check every tricot machine on the day one broke down. It was only a little indigestion that made George lose his desire to call a meeting.

You don't have to go to the extent of formally examining yourself each morning, but just realize on those days when you don't feel up to par that it will take some extra self-discipline to keep you from lapsing into mistakes. Let every yawn be a warning sign.

JUDGING THE EMOTIONS

George agrees with many honest men when he admits, "Most of the mistakes I've made in my life came because I was guided by my emotions rather than my intelligence."

This is a common source of mistakes. There are two questions that you can ask yourself before you make any decision, however, which will substantially reduce your number of emotionally-motivated errors. Ask yourself:

"What *external* stimulus is prompting me to say or do what I am about to say or do?"

These are easy to identify—someone presents George with an erroneous invoice. A hurry-up request comes in from shipping.

"What *internal* stimulus is prompting me to say or do what I am about to say or do?"

These are concerned with desires

By S. G. WILLIAMS
Management Consultant
New York City

and feelings and are much harder to identify. They include things like George's desire to show up his rival in the purchasing department or the pressure his wife is putting on him to ask for a raise.

One of the men's hosiery machines in George's plant broke down (that's an external stimulus). It was an old machine and this was the sixth time it had had trouble. George had been trying for some time to get his boss to buy a new machine to replace it (that's the internal stimulus). So he decided to let it sit idle to enforce his point. His boss, faced with other financial problems, finally came along and chewed him out properly.

Later, a union-shop steward came in to complain about the way overtime was being distributed (external stimulus). He had been coming in frequently with grievances and George had felt he was trying to get the upper hand (internal). The long harangue George gave him about union aggressivenesss and lack of co-operation only caused complaints to higher management.

KNOW YOUR PRESSURES

What is important—vitally important—about these stimuli is this: Make sure you know what they are, both the internal and the external pressures. Then don't let the internal interfere with your taking the proper action to correct the external.

Often George is rather ashamed of the internal stimulus, when he has identified it. This gives him the key to avoiding mistakes in the emotional area. If he is proud of the internal (really the emotional) stimulus, if he'd be glad to tell his boss, his wife or 15-year-old son about it, then George would be pretty safe if he went ahead with his decision. But if he wouldn't be proud to talk about it, he has a practically foolproof yardstick; "Don't do it!"

USING THE MIND

The mistakes of the mind are much more subtle. The two biggest problems are those of incomplete information (both what is wrong and how to correct it) and the tricks of self-deception.

A supplier he does not usually deal with called George the other day and offered him some raw wool at a substantial saving if he could get his order in quickly. He jumped at the bait only to have the delivery come three days late. All the advantage of the saving was lost. On top of that, the unknown supplier had been a little loose with his grading standards. Some of the material didn't meet the necessary quality standards. With the temptation of a saving before him, George acted with insufficient information.

You'll never be able to get all the facts on a problem—often there just isn't enough time. When you do have some time to work with, though, a good idea is to write down all the things you would like to know, then try to get as many of the facts as you can. You'll have a specific list then of what you do not know and can figure the possible consequences.

Once you have gathered all the information possible and have it clearly before you, an action may seem clearly appropriate. If not, here are two suggestions: (1) consult and (2) write down alternative possibilities.

In his effort to be the fair-haired boy of the company, George often forgets that no one is expected to know everything. He wants the boss to feel he can take responsibility, so he doesn't use the talents of specialized people who can help him—perhaps an economist, an accountant, or a machine operator. "Consult the expert" is very sound advice. The manager's talent is knowing how to apply this information to broader problems.

WRITE IT DOWN

If you do not have this outside help available, make a list of possible actions. In the wool-buying example, the list would not have been very long. Just this: Buy or Don't Buy. But where the machine broke down, George could have listed many alternatives—buy a new machine, try a makeshift repair, close down the defective machine and put another shift on some others, etc. Writing the ideas down makes you express them more clearly than when you carry them in your head. Often it brings out difficulties you had not thought of.

Now let's examine briefly some of the tricks of the mind.

. . . *Rationalization:* This means that all of us have a talent for figuring out how it is someone else's fault or someone else's responsibility. The Army has a good rule on this. "You can delegate authority, but you can't delegate responsibility." When that too-high pile of boxes came crashing down in the stock room, George bawled out the man working there. But that room was under George's supervision and he should have spotted the pile before it got to the danger point. The first rule is to know your responsibilities—you can't escape them.

. . . *Projection:* This is the process of supposing others have the same ideas and feelings as ourselves. It leads management men along a seemingly rosy path unaware that anyone would disagree. A lot of union troubles are the result of projection. A little investigation may prevent a major crisis.

. . . *Aim Substitution:* The phenomenon here is that of kidding yourself that you are doing something "for the company's benefit" or "for the good of the employees" when you are really doing it for yourself. You only succeed in looking like a hyprocrite to everyone else. When George transferred a worker he didn't get along with, he said in a fatherly tone that "it was to allow the man to develop himself more fully."

QUIET ROAD TO PROGRESS

If you take the time to seriously follow the policy of careful self-examination outlined here—of your physical condition, emotional pressures, and mental acuity—you'll make great progress toward eliminating those "stupid mistakes" and "careless errors." This progress isn't a dramatic affair. There is no brilliant stroke of genius involved, where everyone pats you on the back. It is a long, steady process of avoiding calamity—a process that creates many positive benefits. A smoother, more pleasantly working operation and a more profitable one. You'll never know anything unusual is happening. That's the best sign of all.

TEXTILE WORLD

CHEMICAL TREATMENT AND FINISHING

IN THIS SECTION

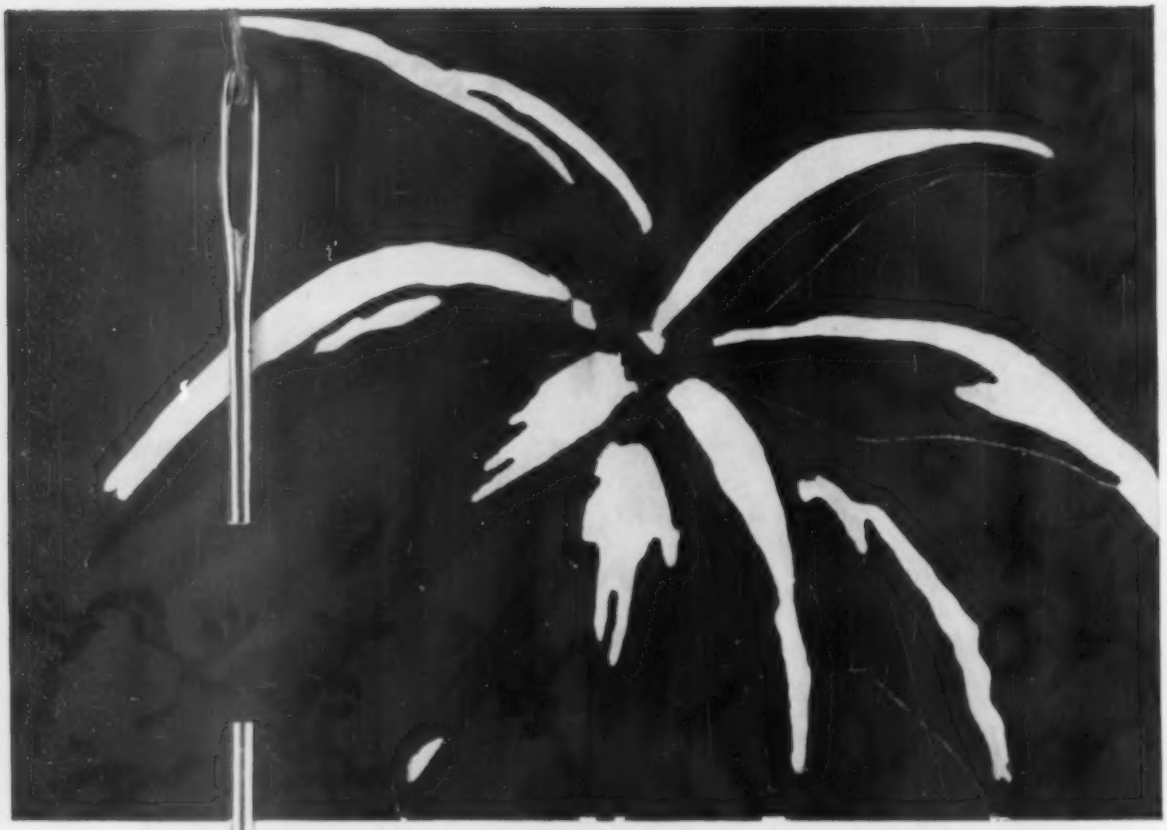
NEWS OF THE MONTH IN TEXTILE CHEMICALS..... 77

WHAT'S NEW IN DYES AND CHEMICALS..... 80

Latest Word on Cotton Finishing—Research chemists continue to make progress in probing cotton's mysteries. They come up with new discoveries, new insights..... 83

Cluett Peabody's 3-Part Formula for Better Finishing—Element 1: Start with good gray goods; 2: take pains in finishing; and 3: keep quality standards high 88

How Print Works Agers Operate—Acid agers operate successfully when they are built right and when there's good control of time, acid content, temperature 94



with
Naphthols
Vats
Sulfurs
Pigments

BLANDOFEN®

NONIONIC POLYMER EMULSIONS

give better finishes with increased fastness to wet and dry crocking

BLANDOFEN AC and **SL** in combination offer textile finishers a series of outstandingly effective anticrock agents for colored cottons and rayons, either alone or in blends with today's popular synthetic fibers. Together, these Blandofen products are particularly valuable for fabrics colored with naphthols or pigments.

BLANDOFEN combination finishes also add softness and a full appealing hand to textiles. No other softener, wax, or lubricant need be used with the Blandofen emulsions on either dyed or printed fabrics.

Although Blandofen AC contributes greatly to the prevention of crocking, Blandofen SL is necessary to provide the required plasticizing effect. Both agents are compatible with textile brighteners.

BLANDOFEN SL, also by itself, is an excellent textile softener. It is nonyellowing and is used to eliminate needle cutting, increase tear strength and abrasion resistance, improve the draping qualities of fabrics.

BLANDOFEN polymer emulsions are available in carloads, truckloads, or single drums. BLANDOFEN SL is also supplied in bulk. Write or call any Antara office for Blandofen samples, information, and technical assistance.

gaf
gdc ANTARA

From Research to Reality

GENERAL DYESTUFF COMPANY • ANTARA CHEMICALS
SALES DIVISIONS OF GENERAL ANILINE & FILM CORPORATION
435 HUDSON STREET • NEW YORK 14, N. Y.

SALES OFFICES: New York • Providence • Philadelphia • Charlotte • Chattanooga • Chicago
Portland, Ore. • San Francisco • Los Angeles. IN CANADA: Chemical Developments of Canada Ltd., Montreal

News of the Month in . . .

Textile Chemicals

By ROBERT W. PINAULT, Associate Editor, TEXTILE WORLD

Sprayed Vinyl Plastic Produces New Designs

A new way of getting a wide variety of decorative effects on textiles was demonstrated at N .C. State School of Textiles last month by B. F. Goodrich Chemical Co. Stripes, swirls, spatter designs, and various random effects are possible from the new system.

The job is done by spraying colored vinyl plastic on fabrics as they enter a tenter frame. Spray heads, made by Binks Mfg. Co., are mounted in a rack that can be set to move in rotary or oscillating motions as the goods pass under them. The heat of the tenter dryer fuses the vinyl to the fabric permanently. The decoration causes little or no effect on hand, and has a three-dimensional effect.

Various patterns are possible through adjustment of the spray heads, altering the flow properties of the plastisols, or varying the number of spray heads in action. The pilot installation operates at 25 yards per minute but higher speeds are possible with adequate heating capacity and simple patterns.

Potential for the new decorative system looks good. Natural outlets for fabrics treated this way would include automobile interior trim, draperies and curtains, upholstery and slipcover fabrics, lampshade fabrics, outerwear, and wall-covering fabrics.

The pilot equipment installed on the College's tenter will be available for test purposes so that individual companies can evaluate the new process or prepare goods for test marketing.

The Geon vinyl plastic used for this purpose is supplied by Goodrich, the liquid dispersion or plastisol used in the spray heads was prepared by Flexible Products Co., Marietta, Ga.

Peroxide Bleaching Method Promises Quicker, Less Costly Bleach Jobs

Cotton hosiery, usually bleached with hypochlorite, can be put through in less time and at lower chemical costs by a peroxide bleaching method recently announced by Columbia-Southern Corp.

The usual rotary hosiery dyeing machines can be used for the process, which takes about an hour as compared to three hours for the hypochlorite method.

Here's how the system works: The bleach solution is prepared so as to make only enough to saturate the goods to be bleached without waste, plus enough extra to fill the small space between the bottom of the baskets and the tub.

The bleach solution for a 100-lb. machine is made up of:

50 gallons of water
2.5 pounds sodium silicate
0.8 pounds caustic soda
8.3 pounds H_2O_2 35%

For a 100-lb. machine the formula provides 12 to 14 gallons of bleach—enough to touch the bottom of the basket of the machine. The usual amount of brightener may be added, provided it is compatible with the peroxide.

Rotate the reel while adding the chemicals to get thorough mixing.

Load in the goods and rotate until they are wet out.

Drain off the excess liquid that can be saved for reuse.

Close the doors and run in live steam until the temperature reaches 200 F. or higher. Run 20 minutes or longer as necessary.

Turn off the steam and give the goods a hot water rinse at 180 F. The total bleaching time is 60 to 75 minutes.

The advantage of this procedure is a 50% savings in steam and water. The machine can also be overloaded as much as 100% above the normal capacity. The socks are uniformly white and are not degraded in tensile strength.

USDA Has New Approach To Wool Shrinkproofing

Machine-washable woolens appear to be entirely practical if they are treated by a new process developed at the Western Regional Research Div. of the U. S. Dept. of Agriculture's Research Service, Albany, Calif.

The treatment consists of coating the wool fibers with what is essentially a type of nylon. Result: Scales are smoothed over, and one-way contractions are practically eliminated. To get this effect, the wool is first soaked in a solution of a diamine and is immediately pulled through a dilute solution of a diacid chloride. Under suitable conditions, a very thin and extremely durable polyamide film is formed on the surface of the wool fibers.

The treated fabrics gain only about 1% in weight and retain wool's soft, natural texture and hand. They wash without shrinking and dry without wrinkling.

Commercial wool-processing equipment is suitable for the processing, and simple rinsing and drying are all that are needed to complete the treatment.

Suitings, blankets, and knitted fabrics have been treated in the laboratory in this way and after repeated laundering or drycleaning, retain their dimensions, color, hand, and resilience.

Impurities Cut Efficiency Of Shrinkproof Treatments

Any of the oxidative wool shrinkproofing treatments are considerably affected by the condition of the wool at time of treatment. That is what McPhee and Farnworth report in the Textile Research Journal 1960, No. 30, pp. 352 and 354.

Complete purification of the wool, which includes scouring and then solvent extraction, can result in much better resistance to shrinkage in laundering. As an example, if scoured and extracted wool is treated with 2% on the weight of fiber of potassium bromate in a 2½% sulfuric acid solution at 40 C. for 30 minutes, shrinkage is only about 5% after laundering. Wool that has only been scoured before treatment still shrinks 27% after laundering.

A welcome side effect is that the thoroughly cleaned wool was not damaged by the oxidation treatment in spite of vastly better resistance to shrinking.

Other experiments by McPhee show that prior boiling of wool in sulfuric acid solutions at pH 1.1 inhibits later finishing processes aimed at reducing shrinkage. After such treatment, wool that is worked with an acid plus bromate still shows 25% shrinkage after laundering as compared to 14% for wool that had not been subjected to rigorous acid-boiling treatments.

Fabric Treatment Makes Reactive Dyes Less Reluctant to Fix on Some Fibers

The principle of reactive dyes can be applied to nylon, silk, wool, polyamide, and acrylonitrile fibers by a pretreatment originated by Imperial Chemical Industries.

Fixation of dyes with little or no affinity for these fibers is accomplished by first treating the goods with 5% of a compound such as sodium 2:(2-4-dichloro-s-triazinylamino) naphthalene-6-sulfonate for one hour at 90 C. A small amount of formic acid is added to aid absorption.

The fabric—in this case nylon—is then rinsed in water, then in a weakly alkaline bath, and finally in fresh water, and dried.

Such goods, printed with Duranol Brilliant Blue CB 200, will develop a solid blue pattern of superior washfastness as compared to untreated goods.

Triacetate goods benefit by simultaneously treating them in one bath with Duranol Brilliant Blue CB and 4-(2:4 -dichloro-s-triazinylamino) phenoxy-beta-ethyl sodium sulfate.

In any case, it is necessary to use a dyestuff that has a free amino group that will react with the triazine derivative. The many dyes in this type open up a wide field of exploration of this principle.

New Carrier Boost Fastness, Dye Pickup

N-butyl benzoate can be used to apply the high-temperature slow-dyeing types of disperse dyes, according to a patent issued to Celanese Corp. of America. One of the advantages of being able to use this group of dyes on hydrophobic fibers is that in general their fastness to light, gas fading, sublimation, and washing is superior to disperse dyes that work well at lower temperatures.

N-butyl benzoate is used in the form of an emulsion prepared with the aid of emulsifying agents such as Nekal NS, Alipal CO-436, Span 20, and Emulphor ELA-719. As a variation, tripropyl phosphate may replace a portion of the n-butyl phosphate.

Other new carriers, subject to Courtaulds Ltd. British Patent 838,735, include technical grades of para octyl phenol or octyl cresol. The latter is a mixture of o-octyl-p-methyl phenol and o-methyl-p-octyl phenol. These compounds are said to give full shades on triacetate, acrylonitrile, and polyamide fibers when used at a rate of 2 grams per liter in the dyebath.

One-Bath Process Can Apply Azoic Dyes Well

Good results can be obtained with azoic ingrain colors on polyester fibers by a one-bath method developed by Farbwerke Hoechst A. G., Germany (British Patent 846,491).

The trick lies in applying the 2:3 hydroxynaphthoic component of the dye, or a derivative of it, along with a mono or diamine of the azobenzene or diphenyl series in the same bath, but under different pH conditions.

The bath is first made alkaline while the amine component is being absorbed by the fiber, then sulfuric acid is added to aid absorption of the 2:3-hydroxynaphthoic acid.

Under these conditions, no resinous precipitate is formed, and the usual diazotization and coupling forms the dye in the fiber.

The dye components available for this process will produce many bluish shades of red or garnet with excellent fastness to light and washing at normal dyeing temperatures without need for carriers.

Drying-Fixing Unit Could Eliminate Agers

Vat- and sulfur-dye print pastes that contain dye and the reducing agents necessary for their fixation on fabric can be steamed and dried in one operation by a modified can dryer developed by British Cotton Industry Research Association.

In this system, the printed goods are run between the heated cans and an endless rubber belt that retains the moisture released from the goods by the heat. The belt is threaded in such a way as to be outside the printed fabric at all times.

Better Reducing Agents Cut Print Steaming Time

The usual process of printing on vat or sulfur colors dispersed in a suitable thickening paste, drying the print, and then padding the goods through a solution of a reducing agent has been speeded up, according to British Patent 829,177 to Badische Anilin Und Soda Fabrik.

The common practice is to use sodium sulfoxylate formaldehyde as

the reducing agent, primarily because it has little effect at room temperature or below, and thus does not lead to color bleeding and mark off in subsequent steaming.

However, the steaming time for this reducing agent may well run to several minutes. Sodium dithionite (hydro) may be used instead to reduce the steaming time, but this product often goes to work on the dyes at low temperatures, with bad results.

The new reducing agent described is based on an alkali-metal or ammonium salt of hydroxyethane-, hydroxypropane-, hydroxy-isopropane-, or hydroxybutane-sulfinic acid.

This chemical does not reduce the dye at temperatures up to 50 C. even in the presence of strong alkali, but above this point it goes to work fast to complete reduction in 30 to 60 seconds.

A typical print paste can be made up as follows:

100 parts vat dye paste (20%)

100 parts water

600 parts of a 3% decoction of carob-bean flour

200 parts 10% wheat starch paste

Goods are printed with this formula and dried. They are then padded in:

200 parts 30% solution of potassium hydroxyethane sulfinate

50 parts sodium hydroxide

5 parts sodium tetraborate

600 parts water

While still moist, they are steamed for 30 seconds in air-free steam at 108 C. The usual oxidation and soaping follows. As an alternative, the goods can be run over a metal surface heated to 110 C. and covered with a rubber blanket preheated to 80 C. at a rate to allow 25 seconds exposure.

Similar results can be obtained with reducing agents based on the condensation products of mono- or diamines such as methylamine and ethylene diamine with one or more moles of a l-hydroxymethane (or propane or butane)-sulfuric acid.

Common Resins Increase Retardant's Durability

Flame retardants based on water-soluble compounds like bis-2-chloroethyl phosphoramidate can be made durable to laundering if a urea- or melamine-based resin is included in the formulation.

The phosphorous compound is particularly suited to making viscose rayon flameproof. In a typical application, a treating bath is made up of:

20 grams of melamine

110 grams of bis-2-chloroethyl phosphoramidate

80 cc. of 40% formaldehyde

120 cc. of water

The mixture is heated to 70 C. and then cooled. Spun rayon goods are padded in the solution, dried at 65 to 70 C., and then cured at 150 C. for 5 mins. The flameproof finish obtained in this way is fast to washing in soap at 60 C. The combined phosphorous content is 2.5%. Courtaulds Ltd. holds British Patent 835,581 for the process.

Apply Resins First To Printed Linens

It is better to apply crease-resistant finishes to linens before they are dyed or printed, according to a report from Linen Research Institute, Ireland.

Reason is that in order to get good results with resin finishes on linens, they have to be given a pretreatment with caustic soda at a minimum tension. The shrinkage that takes place seriously distorts any printed patterns.

The prefinished fabric takes dyes as well or better than gray goods, fastness properties are unimpaired, and crease resistance is just as good. Prints actually give better penetration when applied to resin-treated linen.

The process is also applicable to viscose rayon fabrics, although these goods are not caustic-treated before finishing.

Antibiotic Works Well As Bacteriostatic Agent

Neomycin has been found to have excellent bacteriostatic properties that withstand many launderings and drycleanings when it is applied to wool, nylon, Orlon, Dacron, or Dynel fabrics.

Recommended procedure is to pad on a solution of 0.1% neomycin and 0.02% sodium metabisulfite to get a liquor pickup of 60 to 100%, then dry the goods in the usual way, up to 225 F. Neomycin has affinity for many fibers. It can also be applied by absorption methods. Useful bacteriostatic properties are imparted to goods with a neomycin content as low as 0.001%, but the preferred amount is 0.01% to 1.00%.

This use of neomycin is patented by American Cyanamid Co.

New Method Checks Reaction Rates

Ever wonder how fast a precipitate like silver chloride forms when you pour an $AgNO_3$ solution into one based on NaCl?

Harvey Blend at the University of California at Los Angeles uses high-frequency sound waves generated in an apparatus he built to time such reactions that may occur in the 1 millionth of a second range.

Minute changes in sound-wave velocity (which changes with the rate of the reaction), as well as changes in wave length as little as 4×10^{-4} can be measured by using his machine.

Sound waves are sent in short bursts to cut down on echo.

Important applications of this type of data will be in the field of learning how molecules combine and separate during chemical reactions.

Did You Know . . .

. . . that if you irradiate cellulose acetate, it loses strength? But if acrylonitrile is present in the gas phase during the irradiation, the strength goes up.

. . . Turn the page

Did You Know . . .

. . . Continued

. . . that calendering tends to elongate some fibers but shortens others? Rayon and wool tend to stretch out under calendering, but cotton and man-made fibers become shorter. Wool and polyester fibers are the hardest to flatten by calendering, while cotton and polyamide fibers are easiest.

■

. . . that contrary to popular belief, severely yellowed nylon can be bleached with ordinary chlorine bleaches? Trick seems to be that if you add a sequestrant such as Calgon to the bath before adding the bleach, any iron or manganese present in the water will be prevented from precipitating and any previously formed soap or detergent films are dispersed.

. . . that you can cut the cost of iron-chelating agents by as much as 48%? Instead of using straight citric acid, a mixture of hydroxy acetic acid and citric acid is suggested in a recent Du Pont report. A ratio of 61.3% hydroxyacetic acid and 38.7% citric acid by weight does the trick. Only 1.1 moles of the mixture are required to provide the chelating effect of 0.6 moles of citric acid used alone.

What's New In Dyes and Chemicals

Premetalized Dyes

Lanamid Scarlet G . . . is a neutral-dyeing premetalized color that is recommended for use on wool, nylon, and modacrylic fibers. The product has good application and fastness properties.

Lanamid Bordeaux BL . . . can be applied in neutral or weakly-acid baths without prolonged high-temperature processing. The dye has excellent fastness properties and is especially suited for dyeing carpet and apparel wools, nylon, and modacrylic fibers. Allied Chemical Corp. **Circle D-1 on Reader-Service Card**

Direct Dye

Sirius Supra Blue BRL . . . produces relatively bright shades of blue that have good lightfastness and good money value. The lightfastness of shades dyed with this color is normally not affected by resin finishes, and the shade change is only slightly greener in most cases. The dye has very good solubility. Verona Dyestuffs. **Circle D-2 on Reader-Service Card**

Bacteriostats

Steri-tized . . . is a generic term for a series of bacteriostats, fungicides, and mildew preventatives based on nonleaching mercury compounds.

Under the designation of Steritized 505, 510, 515, and 520, the products are effective when applied to natural or man-made-fiber fabrics as a part of plain finishes or coatings. Application is simple. The materials can be added to dye or finish baths and are compatible with most other finishing materials. After drying, the bacteriostats resist leaching. Griffin Chemical Corp. **Circle D-3 on Reader-Service Card**

Print-Gum Thickeners

Startex . . . is a generic term for a series of high-viscosity products based on chemically modified carbohydrates. The thickeners can be used with vat, Rapidogen, soluble vat, and direct colors to produce emulsion-like print pastes suitable for all types of roller or screen printing and to give high color yields and easy wash-out properties. Morningstar-Paisley, Inc. **Circle D-4 on Reader-Service Card**

Warp Sizing

Synthosize . . . is a resin copolymer that is especially designed for sizing filament yarns made from acetate, triacetate, or polyester fibers.

The products is supplied as a concentrated liquid and is diluted to a 6 to 8% solids content for use. Warps prepared with it are claimed to weave well, and the sizing is easily removed in a mildly alkaline scour. Morningstar-Paisley, Inc. **Circle D-5 on Reader-Service Card**

Cationic Softener

Aquazine 100 . . . is a hydrazinium compound that is recommended for use as a softener for all textile fibers. The product is cationic but can be used in package dyeing and is an effective softener for napped, knitted, or wash-and-wear fabrics. The softener does not retain chlorine, will not yellow, and is compatible with optical bleaching agents in the same bath. Moretex Chemical Products, Inc. **Circle D-6 on Reader-Service Card**

Antistatic Agent

Aquazine-88 . . . is a companion product to Aquazine 100. It is a hydrazinium-based compound that has excellent antistatic properties when applied to any man-made-fiber yarn or fabric. Moretex Chemical Products, Inc. **Circle D-7 on Reader-Service Card**

Towel Softener

Tex-Wet 1034 . . . is a white, creamy paste that is especially adapted to producing a soft absorbent finish on terry towelings. Whites or pastel shades are not affected by the product, which can be used in any conventional finishing process and is equally effective on knitted fabrics. Texize Chemicals, Inc. **Circle D-8 on Reader-Service Card**

Acid Dye

Sandonyl Brilliant Violet B . . . is recommended for the production of violet shades on nylon knitted fabrics, particularly heat-textured sweaters in which barré effects must be avoided. The color is economical and has the necessary fastness properties for the sweater trade. Sandoz, Inc. **Circle D-9 on Reader-Service Card**

Geigy Tinon® (superior vat colors)... For industrial clothing, the name Tinon assures you of vats meticulously tested for stability, dispersibility and dyeing qualities. Geigy Dyestuffs, Ardsley, N.Y.

Demonstration: RHOPLEX at work in modern textiles

This is a picture of RHOPLEX acrylic resins doing six important jobs.

RHOPLEX gives improved crease-resistance and strength properties to the dress fabric. RHOPLEX holds the fibers of the coat's pile lining secure through repeated washing and dry cleaning. The RHOPLEX backing prolongs the life of the chenille rug . . . withstands sunlight, washing and hard use.

In the dress, RHOPLEX is an efficient anti-crock for the pigment colors. RHOPLEX backs the upholstery fabric. And finally, a wash-resistant RHOPLEX binder holds and protects the fibers of the non-woven interlining of the coat.

For more information about these and the many other ways RHOPLEX resins can serve you, write to Rohm & Haas today. Get the benefits of Rohm & Haas' experience in pioneering and perfecting acrylic products for the textile industry.

RHOPLEX is a trademark, Reg. U. S. Pat. Off. and in principal foreign countries.

Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

RHOPLEX

TEXTILE WORLD . . . Meeting Report

Latest Word on Cotton Finishing

Here's news from the research chemists—and proof they're making progress—with new wash-wear techniques, microscopic discoveries, structural insights. In a word, they're coming up with new know-how.

CONFIDENCE in the future of chemically finished cottons. That was the keynote of the Ninth Chemical Finishing Conference, sponsored by the National Cotton Council and held at Washington in September.

Justification for this attitude is threefold:

- In 1959, 1.9-billion yards of cotton goods were given wash-and-wear finishes—up from 1955, when 600-million yards were so processed. That's quite an increase.
- Use of an extra million bales of cotton last year to satisfy demand for the chemical finishes, in spite of the inroads of man-made fibers into the easy-care field. Losses in tire cord, industrial fabrics and laundry bags were more than made up by the resurgency of apparel fabrics. Cotton still is the major fiber, with 64% of the fiber market in all domestic mills.
- The quality of the research work that is constantly going on to improve chemical finishes. Persistant and painstaking work on the nature of fibers, which must be understood before application of reactants can be successful, coupled with thousands of experiments on new and old crosslinking materials, is gradually lighting the way to improved chemical finishes.

Emphasis this year is about equally divided between research on fiber structure and more exhaustive examination of the effect of known cross-linkers on cotton fiber. There's news on one new proprietary compound, and a hitherto refractory chemical has been modified to serve a useful purpose. Work continues on the application of formaldehyde and glyoxal, both of which are cheap and effective but present problems of high strength loss under conditions that are suitable for other types of reactants.

Independent investigators are arriving at the same conclusions on the reactions that take place when cotton is treated with cellulose reactants. That's a good sign that chemists are solving the mysteries of the molecules one by one.

Cotton Differences Hold Despite Finishing

By Rollin S. Orr, Albert W. Burgiss, Lloyd De Luca, and James N. Grant, Southern Regional Research Laboratories

Differences between cottons of various properties are reduced but not eliminated by mercerizing or treatment with resins.

The reverse spirals inherent in cotton-fiber structure are a big factor in producing strength, elastic recovery, and elongation.

Experiments in mercerizing and resin-treating cotton fibers show that spiral structure persists through mercerization even under tension. High alignment of cotton that is resin-treated under tension causes a reduction in elongation and an increase in strength as compared to treatment in the slack condition of the fiber.

New: A Low-Cost Water Repellent

By Herman B. Goldstein, Warwick Chemical Div., Sun Chemical Corp.

A lower-cost water-repellent finish will work as well as the Quarpel finish developed by the Quartermaster's Corp.

All the well-known proprietary water repellents were investigated as companion chemicals to a fluorocarbon compound that was produced by Minnesota Mining & Mfg. Co. and marketed as Textile Chemical FC-208.

The synergistic effect of combining two types of water repellent first done by the Quartermaster Corps is well known. The extensive new research was undertaken to determine the best possible combination of older materials with the fluorocarbon product, at the least possible cost, and still be consistent with good results.

Included in the experiments were products based on quarternary ammonium compounds, stearamide-resin dispersions, silicones, metal salt-wax emulsion types, and a cationic thermosetting compound.

Research shows that the quarternary compounds give the best overall results. Zirconium wax emulsions have the least effect on color of the fabric. Trials showed that the proportions of fluorocarbon to quarternary compound used in the Quartermaster Corps work can be altered significantly to come up with satisfactory results at about half

the cost of the Quarpel formulations. A slight yellowing of the finished fabric is a side effect of treatment with these materials. This could be important in processing whites, or printed fabrics with large white areas.

Conclusion: A mixture of quarternary water repellents with the fluorocarbon compound mentioned will produce excellent water repellent effects that are durable to both drycleaning and laundering to a greater extent than if either is applied alone. Abrasion resistance and a fair degree of rot resistance also characterize the combination-treated goods.

Crosslinking Changes Cotton's Properties

By Fred H. Steiger, Stella Y. Wang, and Melvin D. Hurwitz, Rohm & Haas Co.

The poor crease recovery-strength relationship typical of the cotton-formaldehyde reaction under dry-cure conditions is primarily a function of the formal linkage. It is not due to the degradative effects of acids formed by the catalysts.

Cotton in the wet state can be crosslinked by hemiacetal linkages without heat or catalysts. The crease recovery-strength relationship produced by this process is similar to that produced when DMEU resin is cured on cotton.

In comparing these results with those obtained from formaldehyde, it appears that a sharp change takes place in going from a 3-atom to a 4-atom crosslink, but little change occurs thereafter. Furthermore, the strength loss produced by the cured DMEU is comparable to uncured glyoxal in the absence of degradative effects produced by hot acidic curing of the thermosetting finishes.

A high wet-to-dry crease-recovery ratio evidently requires that crosslinking at some stage take place in a highly swollen condition, far beyond swelling found during the application of typical aqueous cotton creaseproofing agents.

A New Look at Wrinkle Recovery

By Dr. S. James O'Brien, American Cyanamid Co.

Wrinkle recovery appears to depend on intramolecular bonding of the same anhydroglucose unit—or at least the same cellulose molecule. The formation of covalent crosslinks is required to improve dry-wrinkle recovery in cottons.

Only a small fraction of the crosslinking agent is actively involved in crosslinking cellulose molecules in a typical reaction set up for the purpose. A large part of the reagent is taken up in the formation of some kind of intramolecular bridge, according to this new theory of molecular bonding.

The same principle is believed to apply to wet-wrinkle recovery. Work done to support these hypotheses also indicates that the cellulose-formaldehyde reaction theory is generally applicable to other cellulose reactants.

Where the physical character of cellulose differs from that of cotton, as it does in rayon, the same theory regarding crosslinking and intramolecular bonding still applies. But there's a difference: The tendency to form crosslinks in rayon seem less than in cotton, and even more intramolecular bonding is involved in rayon creaseproofing.

Mercerizing–Help in Crease Resistance

By Leon H. Chance, Rita M. Perkins, and Wilson A. Reeves, Southern Regional Research Laboratory

Two processes based on formaldehyde as the principal reactant can improve crease-resistance.

One involves reacting the cotton fabric in a wet-swollen condition in an aqueous solution of formaldehyde and hydrochloric acid. Fabric that has been so treated has good wet-wrinkle recovery and strength retention—when mercerized—and is suitable for line drying.

The other process consists of reacting the fabric in a wet, partially swollen condition in a solution of acetic acid, water, hydrochloric acid, and formaldehyde. This treatment produces a fabric with good wrinkle recovery in both the wet and dry states. The goods can be tumble-dried.

In both processes, for satisfactory strength retention the fabric should be mercerized before treatment.

The extensive experimental work from which these processes were evolved included trials at various temperatures, in various reaction times, and with varied proportions of reactants. Evidence supports the theory that only methylene bridges are formed in these processes.

New Reagent Is Easy to Handle

By Giuliana Tesoro, Paul Linden, and Stephen B. Sello, J. B. Stevens & Co., Inc.

A derivative of divinyl sulfone (DVS) does the same job as DVS without producing the irritating and toxic effects of DVS.

Divinyl sulfone (DVS) reacts with cellulose under alkaline conditions to produce a crosslinked cellulose ether as the main reaction product. Difficulties of hauling the reagent, which is extremely irritating and toxic, were solved by making various derivatives that can be easily handled. One selected for this investigation was sodium triosulfate compound, called B salt.

The reaction of the B salt with cellulose takes place readily in alkaline solutions, and you can handle the B salt without trouble. Applications procedures include padding on the B salt, drying the sample at moderate temperatures, then padding the goods in an alkaline solution. The samples are left in the wet state to react, then treated with dilute acetic acid, and finally washed in a nonionic detergent.

The treatment gives cotton fabrics a somewhat higher moisture

regain, good recovery from wet creasing, and moderate recovery from dry creasing. Tensile-strength losses are about in the range observed for most known crosslinking agents. Tear-strength losses are quite severe if softeners are omitted in the final finishing.

The DVS/B-salt treatment gives excellent dimensional stability to cotton. Bleaching agents do not break the DVS-cellulose bonds, and there is no chlorine retention. Crosslinks are also stable to acid hydrolysis and are moderately stable to alkaline hydrolysis. Over-all wash-and-wear performance is excellent—better than might be expected from crease-angle recovery measurements.

How Resins Affect Cotton Fibers

By Verne W. Tripp, Anna T. Moore, and Mary L. Rollins, Southern Regional Research Laboratory

A close look at cotton fibers with the electron microscope shows remarkable differences between untreated cotton and cotton that has been resin-treated, particularly in appearance.

Fiber particles obtained by wet-beating samples of cotton in both states show definite differences in appearance, and it is much more difficult to reduce the resin-treated cotton fiber to fragments.

Treated cotton-fiber fragments are short, jagged, and show little fibrillation. Most of them consist of two or more layers of unseparated cell wall.

The characteristic long, shaggy fragments of normal cotton fiber are missing. Single, separated microfibrils are conspicuously absent in resin-treated fiber.

The appearance of the chemically modified cellulose structure suggests the rigidity, low extensibility, and brittleness that are more or less observable in resin-treated fabrics.

Crosslinking treatments also reduce the solubility of treated cotton fiber. Also they control lateral swelling. This effect is more noticeable in dry crosslinking processes than if the fiber is crosslinked in the wet swollen state.

Residues from solution procedures (in the case of treated cotton) showed no pattern associated with the lamellate arrangement of microfilms in the original fiber, regardless of the state of lateral swelling.

Where large lateral expansion occurred as a result of resin treatment, the residue had a continuous texture, leading to the conclusion that the cellulose was bound by forces that extended continuously through the fiber in a radial direction.

In other specimens there were regions that had a granular appearance. Maximum crosslinking would be expected to produce an insoluble cellulose.

X-Ray Angles Reveal Cotton Differences

By Ludwig Rebenfeld, Textile Research Institute

Resin-finishing experiments indicate that different cottons react differently to identical chemical treatments. In general, cottons with high X-ray angles exhibit greater changes in fiber mechanical properties as a result of both mercerization and resin treating than do those with a lower X-ray angle of fibrillar orientation.

An examination of fibrillar orientation as measured by the X-ray angle was chosen as the major variable in cotton fiber in view of its previously indicated significance in terms of mechanical properties.

The mercerization of single fibers of six different types of cotton caused varying differences in specimen length: Three contracted, three became longer. The change in length is statistically significant in the evaluation of fiber properties after treatment with caustic or resins.

Cottons with high X-ray angles appear to correlate well with inverse relationship between breaking extension and elastic modulus.

How Catalysts Affect Resin-Treated Cottons

By Hilda M. Ziifle, Ralph J. Berni, and Ruth R. Benerito, Southern Regional Research Laboratory

Cottons treated with DMEU resins are affected by chlorine in laundering operations. And the role of the catalyst in chloramide production is affected by catalyst concentration as well as its chemical make-up.

Experiments indicate that the DMEU-catalyst complex is a nitrogen-to-metal bond. The final pH is dependent on the formaldehyde involved rather than on the catalyst.

Crease-recovery properties as well as chlorine retention of resin-treated samples are dependent on catalyst concentration. There is a critical catalyst concentration at which the maximum crease-angle recovery, the maximum crosslinking, and the minimum chlorine retention are observed for different catalysts.

At this concentration, M_gCl_2 and $Zn(NO_3)_2$ afford the same degree of protection from chlorine damage. $M_g(NO_3)_2$ is poorer in this respect than the above, but better than $ZnCl_2$.

Infrared absorption spectra were used in an attempt to distinguish differences between catalysts, but without consistent results. Even so, it is possible by this means to distinguish between treatments in the presence or absence of catalysts.

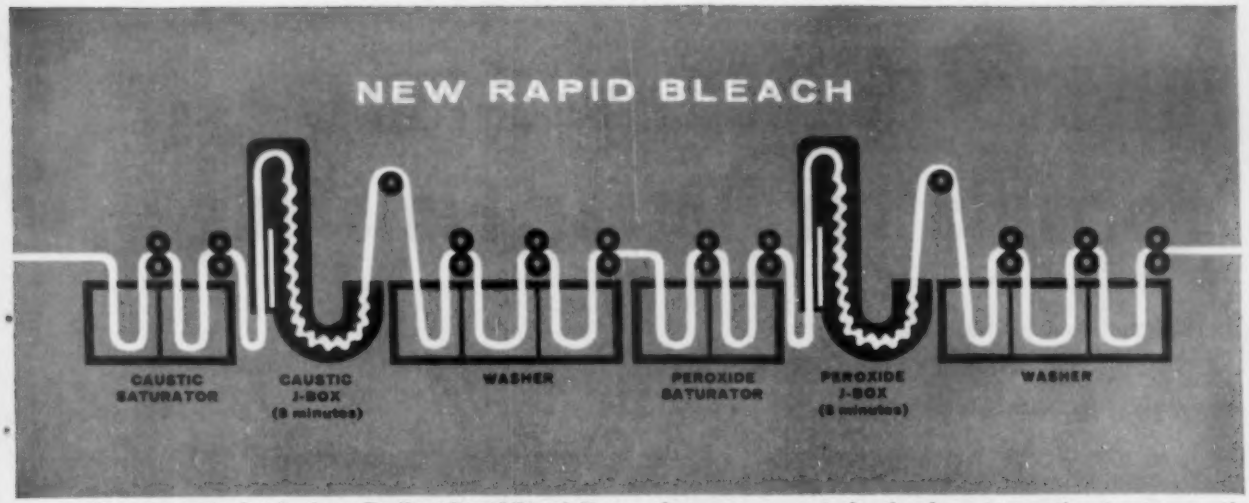
Laundering had no effect on the IR spectra, did not remove the metallic ion, and caused no loss of nitrogen when a catalyst was used. Absorption spectra of chlorinated and chlorinated scorched samples did not suggest the presence of N-Cl bonds and so seem to contradict the theory of formation of chloramides and release of HCl, which degrades cellulose.

Laundering appears to cause oxidation of the complex, varying with the catalyst used. Changes in absorptivity as a result of treatment indicate that the crosslinking occurs by reaction of DMEU with primary alcohol groups of the cellulose.

Du Pont's New Rapid Bleach Process Cuts Bleaching Costs... Improves Dyeing Quality

DU PONT
REG. U. S. PAT. OFF.

ALBONE® hydrogen peroxide **SOLOZONE**® sodium peroxide **PERDOX**® sodium



Diagrammatic sketch of new Du Pont Rapid Bleach Process shows arrangement of major elements: caustic saturator, caustic J-box, washer, peroxide saturator, peroxide J-box and final washer. Operation saves time, cuts operating costs. It can be used for medium-weight cotton fabrics and is especially suitable for hard-to-handle heavyweight fabrics that are susceptible to bruising.

Production-scale operations prove the superiority of the Du Pont Rapid Bleach Process over conventional methods for preparing heavy cotton fabrics for dyeing and finishing . . . at a lower cost.

The new Du Pont Process (shown above) prepares fabrics for finishing with high absorbency and exceptionally good dye receptivity. You obtain high color values and much greater clarity from the dye colors used. And you do it faster and easier.

Du Pont Rapid Bleach is a continuous process . . . specifically designed for medium to heavyweight fabrics. It's unique, simple and fast. Has caustic pre-treatment in the first J-box. The new two-stage process reduces cloth storage time to as little as 8 minutes in each J-box. Makes substantial savings possible over batch methods.

This new method introduces an open-width, continuous process designed for the preparation of sensitive fabrics (such as twills, drills, poplins, etc.) for dyeing. It reduces seconds and rejects due to bruises, rub marks and creases and can be readily adapted to any continuous, or semi-continuous, open-width system.

If you'd like more information on new Rapid Bleach, call your Du Pont Representative. He's a specialist in textile bleaching and will be glad to show you how this new process may profitably fit into your mill.

DU PONT BLEACHING PRODUCTS

assure you of the best bleaching results every time. They help speed bleaching operations more economically. They're thoroughly tested and proved out in successful mill operation. All are readily available from convenient shipping points to assure prompt delivery. Du Pont, Electrochemicals Department, Peroxygen Products Division, Wilmington 98, Delaware.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

borate perhydrate **OXONE**® monopersulfate compound **SODIUM PERBORATE**

Cluett, Peabody's 3-Part Formula for Better Finishing

Arrow-brand collars and shirts owe a good part of their eminence to this bleachery's habit of starting out with good gray goods, finishing these fabrics with great care, and maintaining a tamper-proof quality-control system.

SOUND TECHNOLOGY, modern machinery, and a will to turn out top-flight products. That, in a nutshell, is the philosophy that has kept Cluett, Peabody's Waterford, N. Y., plant on top for many years.

The visitor to this bleachery can sense right away that in this operation there's an attitude of quality consciousness that begins in the gray room and extends right up to top management itself.

One prime advantage the bleachery enjoys is that all goods are handled for its own account. Gray goods are supplied by well known mills to Cluett, Peabody specifications, and the number of styles at any one time is not large.

The Waterford bleachery sets the standard for Cluett, Peabody shirtings, some of which are finished at other plants. Total quality is the sum of the extra care that is taken at every step in the finishing of Arrow shirtings at Waterford. Here's a step-by-step rundown.

SINGEING AND DESIZING

Singeing is done at normal speeds of over 100 yards per minute, but the goods are let alone for at least 6 hours in bins after they have been

MODERN WAREHOUSING permits speedy access to any bale in storage. Fork truck eliminates expensive hand labor.

quenched in the desizing liquor. This process is nearly instantaneous in some plants. But at the Arrow bleachery, management feels that the extra time is justified; and it actually costs no more because storage space is available from older bleaching routines.

From the bins the goods get a thorough wash in warm water and go directly to the caustic saturator of the continuous-bleaching range. Carrying about 3% caustic, the goods are led into the heated J-box where they remain for 1¼ hours, and are pulled through a Tensitrol washer to remove solubilized and emulsified foreign matter and alkali.

BLEACHING AT LESS COST

Arrow management is enthusiastic about the combined hypochlorite peroxide bleach stage that follows next. Plant Manager Frank J. Rogan says: "What we like most about this combined bleaching method is that we get better quality, a better white. There is a saving in chemical costs, too, but the synergistic action of two oxidizing agents is what we appreciate most."

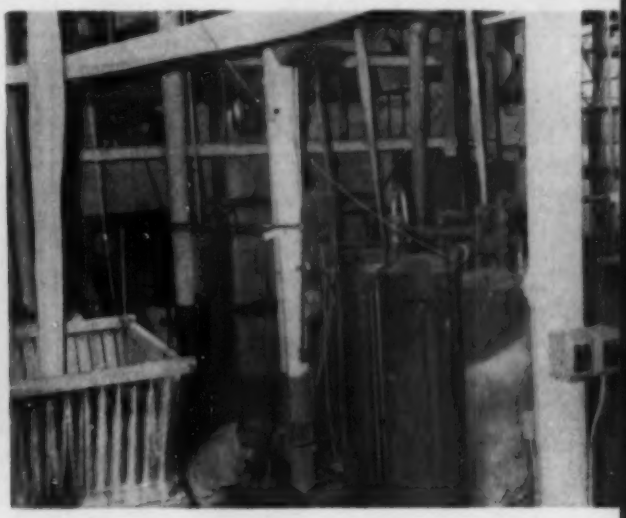
The activated peroxide process was developed by Solvay Process Div., Allied Chemical Corp., and is being used successfully in a number of large bleacheries.

After the scoured goods have been washed, they are saturated in a 1 gram-per-liter solution of sodium hypochlorite and piled in a short J for 8 minutes. From there they go directly to the peroxide saturator, which is charged with about 70% of the normal concentration of H_2O_2 to allow for the action of the hypochlorite.

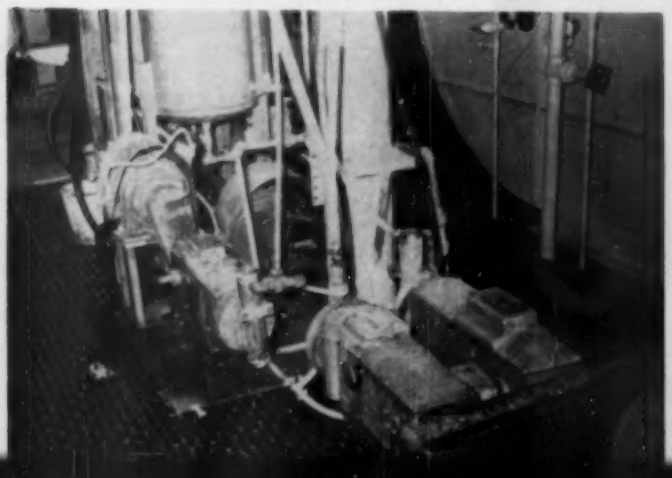
Accurate chemical feed for the bleaching operation is provided by Pulsafeeder piston-diaphragm pumps, made by Process Equipment Div., Lapp Insulator Co. These combination pumps operate on the principle of positive displacement. A piston reciprocates in a cylinder

EXTRA SATURATION with starch digestants is afforded by liquor in this long trough through which singed goods travel on the way to storage bins.

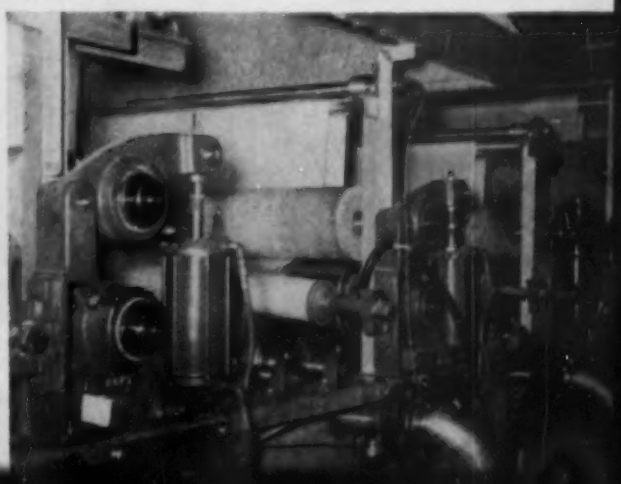
HEATED J-BOX (left) holds goods for 1¼ hours. After the scoured goods have been washed in a sodium-hypochlorite solution, they are held in a short J-box for 8 minutes.

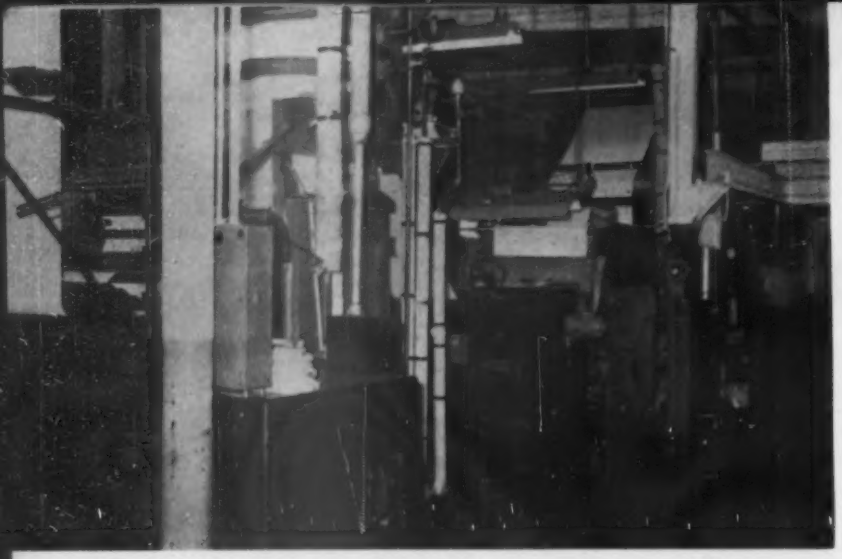


CHEMICAL-FEED PUMPS play an important part in bleaching routine. Constant feed of hypochlorite alkali, and peroxide in proper proportion is essential to uniform bleaching.

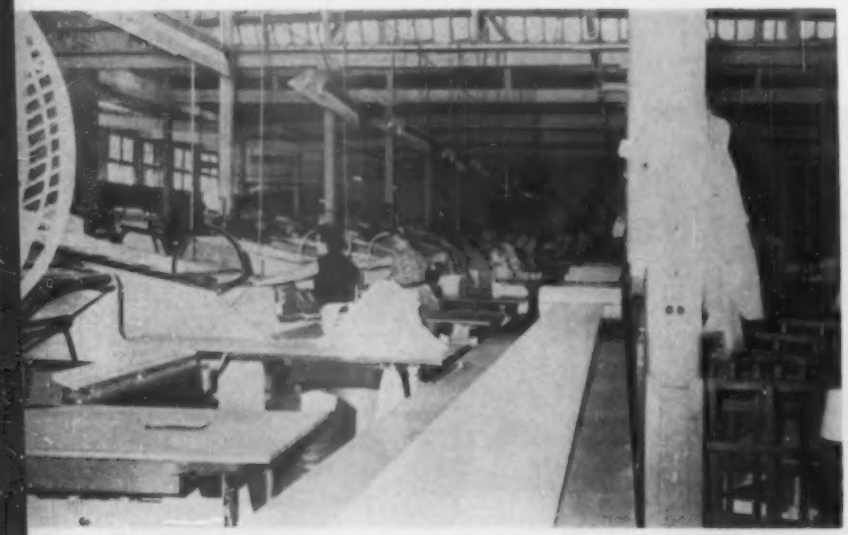


MERCERIZING RANGE: This $47,000 washer unit was installed in July, gets caustic content down to traces before final neutralization.



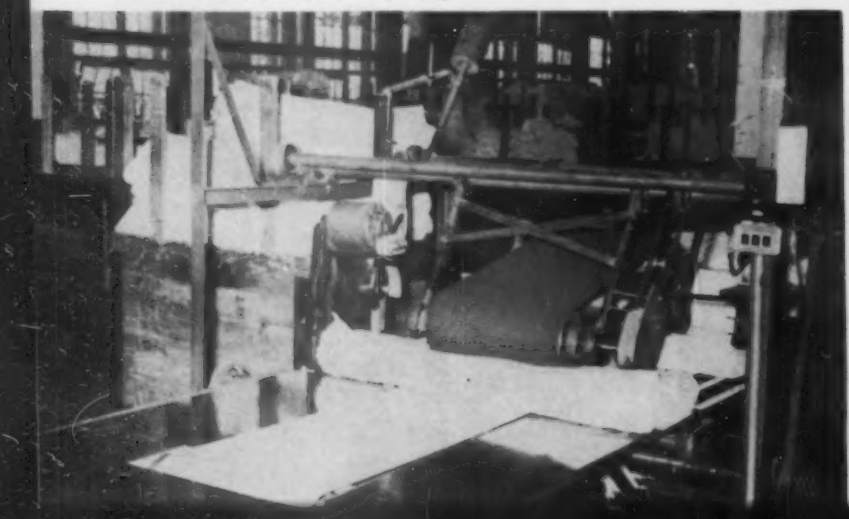


SHRINKING RANGES use rubber belts in place of older wool-blanket types to get residual shrinkage below 1%.



TEN HOOKERS yard off finished shirtings, which are placed on conveyor that takes them to tying machine.

TYING MACHINE, modified by plant engineer, will stop main conveyor if cuts are too closely spaced. Tying machine alone replaced five girls. Conveyor did away with hand trucking of goods to packing area.



BETTER FINISHING

. . . *Begins on page* 88

and forces oil to move a diaphragm forward and to return. The back stroke takes the chemical into the reagent head through suction check valves. On the forward stroke, the chemical is forced into the feeder line to the saturator.

The diaphragm construction separates corrosive chemicals from the piston-cylinder section. There are no stuffing boxes or liquid seals necessary, which eliminates leakage problems. Pumps in use in this installation include a model CPS-1, delivering 0 to 11 gallons per hour at pressures up to 445 psi., and a CPA-2 which will deliver up to 42 gallons per hour at up to 335 psi.

Pumping rates are established by length of piston travel, which is quickly adjustable to suit the treatment for any type of goods.

A 1¼-hour dwell period at 206 to 208 F. is followed by thorough washing through Tensitrol washers. The washing is done under low tension, important to quality because washing is better when tension is low—and there is no overstretching to reduce fabric picks.

MERCERIZING WITH CARE

Cluett, Peabody mercerizes bleached goods almost exclusively. Fabric from the white bins is put through a scutcher, opened, mangled in hot water, and dried to a controlled moisture content of 50%.

From the dry cans, the goods go directly to the mercerizing range where 52 tw. caustic is applied in a three-roll mangle that provides a double nip, each preceded by three dips in the caustic liquor.

A conventional heavy tenter carries the goods under washing sprays and to the two wash boxes.

Two points stand out in the Arrow mercerizing process. Caustic strength is automatically controlled, and wash water is kept at 195 F. or better.

The counterflow system is used to carry the hot wash water from the entering end of the final open-width washers back through the sprays that start the washing process on the tenter.

Volume of wash water is controlled so that washing has become an efficient and consistent process.

Last traces of caustic (0.03 to 0.4%) are killed in a final rinse in weak acetic acid, which winds up the mercerizing. The goods are pan dried prior to finishing.

ADJUSTING SHADE

Another advantage of handling your own goods is that one shade of white generally suffices for all the white goods going through.

Arrow blues the mercerized goods in a separate operation before applying resin finishes. This extra step has a quality angle as well as a large element of protection against expensive retreats.

The simple blueing operation can be modified practically on the run to suit slight variations in the bleached white; but once the big resin-treating range is cranked up, a lot of yardage can be in trouble in a short time if the shade goes off standard.

APPLYING RESIN

The Arrow resin-treating range can also be used as a continuous vat-dyeing range—in fact, it was installed for the latter purpose.

A good bit of ingenuity has been used in setting up the range, which occupies portions of three floors.

Good engineering has provided controls and adequate synchronization of the various units; so with the help of an eight-station intercom system, five men work the entire Arrow range.

Arrow applies resin in a heavy pad, pulls the goods onto dry cans, and then into a tenter where they are dried to width. Curing is continuous through a gas-fired oven situated below the tenter.

The cured fabric proceeds to a pad where it picks up a mild peroxygen chemical and is put through the steamer that was originally installed for the pad-system vat-dyeing process. Next come three sixteen-roll wash boxes, followed by three more, which with the final drying cans are located back on the top floor where the resin was first applied to the goods.

The emphasis on extra thorough washing pays off in goods with a very stable finish that doesn't develop odors and changes very little during the life of the garment.

It was at the Waterford bleachery that the process behind the world-famous Sanforized trade-mark was developed over thirty years ago, and of course no Arrow shirt has since been marketed without the Sanforized label and its guarantee: 1%-shrinkage-or-less. As is well known, practically every bleachery in the U. S. is licensed to produce the finish on cotton fabrics under supervision of the Sanforized Div.

Realizing that the phrase "wash-and-wear" is at best a relative term, Cluett, Peabody has developed an electronic testing method that eliminates guesswork and provides a completely objective evaluation of a wash-and-wear finish.

Started about a year ago, the "Sanforized-Plus" program, established standards of excellence in wash-and-wear that must be met by licensees that attach the Sanforized-Plus label to their products. Nearly two dozen leading manufacturers of cotton fabrics are licensed under the program at this time.

Originally, the "Sanforized-Plus" program was licensed to mills that produce medium- to heavy-weight fabrics, but shirtings and dress goods that meet the requirements are available today.

The Waterford bleachery will handle only a relatively small amount of the yardage processed to meet Sanforized-Plus standards. But its management can be proud of the fact that it is this plant that in effect is the leader in establishing quality standards that will have a far-reaching influence.

ELECTRONIC SMOOTHNESS EVALUATOR checks washed samples of Arrow wash-and-wear finishes. The instrument scans a profile of the fabric surface, as dried and under slight stress. Differences in the readings are used as a base for final calculation of smoothness quotient. Human judgment is eliminated.

NOW... BETTER WATER REMOVAL AT LOWER COST

MANHATTAN TEXTRACTOR AND TEXROC ROLLS

Crack-resistant cover and compounding methods enable a Manhattan Textractor Roll to extract *more* water—reduce crush on the mangle roll! Hard white cover on the Manhattan Texroc Roll actually extracts up to 10% more water than metal rolls—minimizes chemical and dye build-up, eliminates pitting! The result? Better roll performance and longer roll life . . . "More Use per Dollar" on your textile machines.

- **MAXIMUM EDGE-TO-EDGE UNIFORM WATER REMOVAL**
- **LONGER ROLL LIFE**
- **LOWER ROLL COSTS**

"MORE USE PER DOLLAR"

ASK A MANHATTAN ROLL ENGINEER ABOUT MANHATTAN TEXTRACTOR AND TEXROC ROLLS. ALSO ASK ABOUT THE NEW MANHATTAN SLASHER ROLL FOR FASTER, LOWER COST SLASHING, IMPROVED SIZING

RM-1081

ROLL COVERING PLANTS AT PASSAIC, N.J. • NEENAH, WISC. • N. CHARLESTON, S.C.

RAYBESTOS-MANHATTAN, INC.

MANHATTAN RUBBER DIVISION, PASSAIC, NEW JERSEY

RM

ENGINEERED RUBBER PRODUCTS . . . MORE USE PER DOLLAR

Eastman now offers textile finishers 3 basic types of polyethylene

New EPOLENE resins enable textile chemists to formulate broader range of softeners

The wide range of properties now available in Eastman's Epolene series provides greater flexibility in formulating polyethylene emulsions for softening "wash and wear" cottons and synthetics, and for textile lubricants and sizes.

Permanent, low in color, non-chlorine retentive and easy to prepare, emulsions based on Epolene polyethylene give you a practical and economical method for improving the hand, abrasion resistance and tear resistance of "wash and wear" treated fabrics.

With Epolene, you can prepare any kind of emulsion system, cationic, anionic or non-ionic, with solids contents of up to 40%.

Choose from three different low-molecular-weight resins to obtain the right emulsion properties and finishing characteristics for your equipment and service.

Epolene E is the highest-molecular-weight resin of the three. It produces stable, low-color emulsion systems of superior quality for use in softening cottons or synthetics, or as a lubricant to reduce needle-cutting and increase sewability. Like other Epolene resins, it needs no curing, lasts through repeated launderings and resists dirt pick-up and redeposition.

Epolene LVE, a new resin type, has a lower melt viscosity than has Epolene E, thus offering somewhat better handling characteristics. Epolene LVE is softer than other resins in the series. The stability of its emulsions in the presence of resin catalysts is outstanding, especially at the low end of the pH scale, as indicated by its relatively high HLB factor.

Epolene HDE is the first high-density, emulsifiable low-molecular-weight polyethylene on the market. Because it is much harder, it improves significantly the abrasion resistance and tear resistance in cotton and cotton blends. Its stability and permanence are excellent. It, too, offers easier handling characteristics during emulsion preparation because of its low melt viscosity.

If you are formulating polyethylene softeners and would like to produce stable, economical emulsion systems of superior all-'round characteristics, look to Epolene from Eastman. Let us introduce you, also, to new time-saving and cost-cutting emulsifying techniques developed at our textile laboratories. For more information on the formulating and performance advantages of these superior polyethylene resins or for specific formulating assistance, write your nearest Eastman office. We invite your inquiry.

Property	Epolene E	Epolene LVE	Epolene HDE
Molecular Weight	2500	1500	1500
Density	0.938	0.939	0.956
Ring and Ball Softening Point, °C. (ASTM D-36-26)	104-108	104-105	110-111
Penetration Hardness (100 g./5 sec./77°F., tenths of mm.)	2	5	1
Color (liquid), Gardner scale, max.	2	2	2
Brookfield Viscosity (cps. @ 120°C.)	1500	400	455

Epolene

EASTMAN low-molecular-weight polyethylene resins

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Chicago; Cincinnati; Cleveland; Detroit; Framingham, Massachusetts; Greensboro, North Carolina; Houston; New York; Philadelphia; St. Louis. **West Coast: Wilson and Geo. Meyer & Company,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

Acid ageing is used primarily to bring about the coupling of the components of stabilized azoic dyes. Successful and economical operation of acid agers depends on two things: proper materials of construction and good control of time, temperature, and acid content of the steam.

How Print Works Agers Operate

Part 2—Acid Agers

FOR ACID AGEING, you need equipment somewhat similar to what is used for neutral-steam ageing. The acid ager is used to develop the stabilized azoic colors such as the Rapidogens, which replaced the old rapid-fast colors. The latter were aged in neutral steam.

The ager itself resembles the vat ager, with top and bottom rolls set up in much the same way. Some acid agers have double sets of rolls, which increase ager capacity by 75% without adding floor space.

By L. H. FERGUSON
Superintendent of Printing
Wade Mfg. Co., Wadesboro, N. C.

Usually the top rollers are driven. The bearings for all rollers are set out from the ager 8 to 12 inches to protect them as much as possible from the corrosive vapors of acetic or formic acid, which are used in acid ageing.

The openings in the side of the ager through which the roller shafts pass are well sealed with acid-resistant packings. Outside the housing, sling rings catch condensate and throw it off before it can reach the bearing.

The ager is well insulated to conserve heat and reduce condensation. All inside areas are made of 316-type stainless steel. The roof is heated by black-iron steam pipes to which stainless-steel sheet is welded to get heat transfer. Ceramic materials like glazed tile can be used for ager walls, but because they break easily they have not become popular.

The acid ager has a heated throat similar to that in a neutral-steam ager. Only one stack is used on an acid ager. It's at the entering end.

There's no point in exhausting steam and acid at the delivery end of an acid ager. The front stack is used only to take away acid fumes that would otherwise be quite obnoxious.

The acetic acid or formic acid is

introduced to the ager in several ways. It may be vaporized by dripping the acid onto a steam-heated plate at the bottom of the ager. Or it may be run into a trough where it is vaporized by a steam coil. In some acid agers, the acid is fed into the low-pressure steam line. But in most agers a steam injector is used to feed the acid-steam mixture to the ager.

CORROSION A HAZARD

The first acid ageing was done in conventional cast-iron agers by pouring acetic acid in the water well, but the acidic conditions caused serious maintenance problems almost immediately. So wooden-walled agers were built for acid ageing. Brass rollers were used to carry the goods. These rollers became coated with copper acetate, which inhibited further corrosion. But, maintenance on these agers was high, and they had to be rebuilt about once a year.

Modern acid agers are built of stainless steel and give comparatively little trouble.

Superheated steam is generally used in acid agers to avoid an excess of moisture, which causes poor fixation and lowers crock resistance. What moisture is needed is introduced by putting weak (20%) acetic acid through the steam injector.

HOW THE ACID AGER WORKS

The dyes that require acid ageing belong to the naphthol family. They are called stabilized azoic dyes. They're a one-package product that includes the naphthol, the base, and a stabilizer that prevents coupling of the naphthol and the base prior to ageing.

For short runs, dry azoic colors are used. They are dissolved with the aid of urea, cellosolve, or methyl alcohol, and the necessary amount of caustic soda.

If the azoic dyes are used much, they are generally bought as stabilized solutions that require only a small amount of caustic to be ready for use. When these colors are exposed to the acid fumes in the ager, the caustic is neutralized by the acid, and the hot steam causes the naphthol and base to couple and form the color. Slow ageing with weak acid (about 20%) produces better washfastness and there is less tendency to stain white grounds.

Fast coupling with stronger acid tends to give surface effects instead of the desired well-penetrated coupling produced by longer exposure to weaker acid.

Acid agers are sometimes fed a mixture of acetic and formic acids on the recommendation of dye manufacturers. But tests in one plant showed that goods aged with acetic acid alone give less staining of soaper liquor after ageing than goods aged with mixed acids.

REUSING CONDENSATE

The acidic condensate from an acid ager may contain 5 to 10% of acid. In some plants this liquor is collected, checked for acidity, and brought back to full strength with glacial acetic acid.

Plants that do a wide variety of work have found it profitable to build vat-acid agers that can be used with neutral steam for vat colors or supplied with acid to handle the azoic dyes.

These units are made of 316-type stainless steel when necessary to avoid corrosion. Steam is generated in a water well. A trough equipped with a steam coil is used to vaporize the acid when azoic dyes are to be aged. Festoon agers are also used for acid ageing as well as vat ageing.

The flash-ager idea has also been applied to acid ageing. Early models were designed primarily to help the printer check his work for snaps, streaks, or misfits before too much yardage had been printed. These agers held about 10 yards of goods and were run in tandem with the printing machine. Ageing had to be completed in a large acid ager.

ADD A SCRAY

The next development was to add a scray or J-box made of steam-heated pipes to hold 70 to 125 yards of goods according to their weight. Some agers are built with more than one scray so that a long dwell period can be obtained at higher print-machine speeds.

These agers work well if azoic-color content of the print is not too high. But in plaids or in other patterns with large coverage by azoic dyes, there is danger of uneven ageing and of marking off.

A good balance must be maintained between input and output in this type of ager to get enough dwell time without overloading the scray. Packed goods and over-moist steam often lead to mark-off trouble.

Flash agers that have rollers similar to vat agers are also in operation. While they require more space than those with scrays, they do not require such close attention.

NEWER AZOICS BETTER

The newer stabilized azoic dyes marketed as Neutrozoic, Rapid Age, and Fast Fixing work well in the acid flash agers because they will age completely in 30 to 60 seconds. Fastness to washing and crocking is generally superior to the older types of stabilized azoics, particularly in the red shades.

The size of the ager is governed by anticipated printing speeds. If the machine is to be run at 100 yards per minute, the ager should be large enough to hold at least 100 yards of goods.

THE INHERENT PURITY OF DIAMOND CRYSTAL SALT IS YOUR KEY FOR PRODUCT IMPROVEMENT!

Diamond Crystal CMF (Calcium Magnesium Free) and Louisiana Rock Salt offer textile and dyestuff manufacturers extremely high purity at low cost. The result? Consistently better products for you.

Protect the quality of your finished product! Diamond Crystal CMF (Calcium Magnesium Free) type salt will help you eliminate streaking and off shades caused by calcium and magnesium in the dye bath. Result: Fewer Rejects—Higher Profits.

In addition to CMF, Diamond Crystal Louisiana Rock Salt (from Jefferson Island—one of the purest salt deposits in the world) enables textile operations to use this Louisiana Rock Salt (99% pure at its source) without costly side reactions.

For immediate service and consultation, for all your salt needs, call the nearest Diamond Crystal sales office or write to Diamond Crystal Salt Co., St. Clair, Michigan.

Diamond Crystal Salt Co.

ST. CLAIR, MICHIGAN

Sales Offices: Akron • Atlanta • Boston • Charlotte
Chicago • Detroit • Louisville
Minneapolis • New Orleans • New York

Plants: Akron, Ohio • Jefferson Island, Louisiana
St. Clair, Michigan

CELANESE PVAc EMULSIONS BOOST FABRIC APPEAL

Put the swirl in a skirt . . . with versatile Celanese PVAc emulsions. They have a wide range of useful properties to satisfy every finishing need. Durability and tensile strength of woven fabrics varying in weight from percale to denim can be improved . . . stiffness and handle modified as desired. Write for Bulletin NP 28, "Textile Finishing with Celanese Acetate Emulsions." It describes properties, applications, typical formulations and processing procedures. Celanese Chemical Company, 180 Madison Avenue, New York 16.

Celanese®

Celanese CHEMICALS

Celanese Chemical Company is a Division of Celanese Corporation of America
Canadian Affiliate: Canadian Chemical Company Limited, Montreal, Toronto, Vancouver
Export Sales: Amcel Co., Inc., and Pan Amcel Co., Inc., 180 Madison Avenue, New York 16

A JACQUES WOLF Chemical for every processing need!

For any stage of textile processing, Jacques Wolf & Co. has a complete line of chemicals and specialties. Whatever your particular problem, we shall welcome the opportunity of submitting samples custom-formulated to meet your needs. Write for our catalog.

JACQUES WOLF & CO.
60 Park Place, Newark, N. J.

HYDROSULFITES

HYDROSULFITE AWC—($NaHSO_2CH_2O.2H_2O$)
For stripping and discharge printing.
HYDROSULFITE OF SODA—(Conc.) ($Na_2S_2O_4$)
For reduction of vat colors. Non-Dusting
HYDROSULPHITE B Z—($Zn(OH)HSO_2CH_2O$)
For stripping wool stock, shoddy, rags.
HYDROZIN®—($Zn(HSO_2CH_2O)_2$)
For stripping acetate dyes and discharge printing on acetate dyed grounds.
HYDROSULFITE QD—For rapid dissolving in continuous vat dyeing.

DE-SIZING

AMPROZYME®—For liquefaction of starches and proteins in de-sizing textiles.
DIASTAZYME®—Used as an economical de-sizing agent for starch-sized textiles.

SCOURING

ORATOL® L-48—A synthetic detergent with excellent penetrating and emulsifying properties.
BENSAPOL—A liquid detergent derived from Monopole Oil particularly useful for scouring wool.
LOUPOLE W-950—A penetrating detergent for use in scouring or boiling off.
PARNOL—Sodium Dodecyl Benzene Sulphonate.
SELLOGEN® GEL — A synthetic detergent used also in dyeing and as a wetting agent for all natural and synthetic fibre.
DETERGENT W-1750A—Has anionic and non-ionic properties; excellent for scouring nylon and dacron to remove throwster sizings; penetrates and lifts graphite streaks

DYEING

WETSIT™ CONC—A synthetic aromatic compound for wetting out in both the dyeing and scouring operations.
WETSIT NI—100% non-ionic wetting agent.
MONOPOLE® OIL—A highly concentrated, double sulphonated castor oil for a wide range of operations.
APASOL®—Particularly effective in the dispersion of acetate printing colors. A sulphonated ester with a high combined SO_3.
LOMAR® PW—Dispersing agent for pad dyed vat colors; also retardant in the dyebath.
SULPHONATED OILS—Castor, Cod, Sperm, Olive, Neatsfoot, Pine, Red, Teaseed, etc.

FINISHING

DILEINE® SERIES—An amino concentrate for the prevention of atmospheric gas fading on dyed acetate fibers.
MELEINE® SERIES—Complex organic nitrogenous compounds used on finishes to protect acetate dyed fabrics from atmospheric gas fading.
STATLESS—Paste for reducing static on all fibres.
CREAM SOFTENERS—In different strengths and varied degrees of alkalinity for a soft full hand to all types of fabrics.
LUPOMIN®—A series of cationic nitrogen compounds used for softening and finishing textiles.
CHAFE REMOVER W-545-T—A finishing oil for textiles, particularly silk fabrics, to remove chafe marks.
LUXAPOLE™ W-1054-B—A superior, sulphonated oil for finishing all fine fabrics.
OIL S-261C—A clear, amber oil used as a penetrator and softener for cotton cloth; aids in uniform shrinkage.
SOLUBLE WAX JB—A dispersed vegetable wax for full body and high lustre to cotton goods.
WEIGHTER FINISH M—For heavier body and better hand for all fabrics.

PRINTING

SUPERCLEAR™—Prepared from natural gums as a thickener for printing all types of textiles.
SUPERGUM™—A cold-water soluble gum.
PIGMENT WHITES—Dispersed suspension of white pigments with plasticizers for use on light grounds, or white discharge on dyed ground shades.
ACETATE OF CHROME—As a mordant in dyeing and printing mordant colors. Also for dyeing mineral shades
TRAGACANTH—Gum solutions in various concentrations for extra clear, sharp prints when used with acid, direct or insoluble Azo dyestuffs.

OTHER SPECIALTIES

Mordants	Gums—Arabic, Karaya and Tragacanth
Defoamers	Fiber Lubricants
Sizes	Thickeners
Delustrox	Wool Oils
Penetrants	Sulfonated Oils (various bases)
Weighting Finishes	

JACQUES WOLF & CO.
Chemicals NEWARK, N.J.
A subsidiary of Napco Chemical Company

CIRCLE 98 ON READER SERVICE CARD

CIRCLE 99 ON READER SERVICE CARD ➡

Franklin-Dyed Yarns

THE ANSWER TO FASHION'S INSATIABLE DEMANDS

417-9

Franklin Process COMPANY

A DIVISION OF INDIAN HEAD MILLS, INC.

Fashion is synonymous with change and variety. Franklin Dyed Yarns facilitate both of these elements. They are obtainable in a comparatively short time in *custom dyed* colors — processed to *your individual* specifications. Franklin Dyed Yarns are used by many fashion leaders, because:—

1. With the largest package dyeing capacity in the world and 4 plants, Franklin is a highly dependable source of supply.
2. The Franklin Compressible Spring assures uniform density of packages and hence uniform shades.
3. Franklin's unequalled laboratory facilities and half a century of experience assure strict quality control and the know-how to cope with difficult dyeing problems.

Get in touch with our nearest plant or office and let us quote on your yarn dyeing requirements.

LARGEST PACKAGE DYERS IN THE WORLD

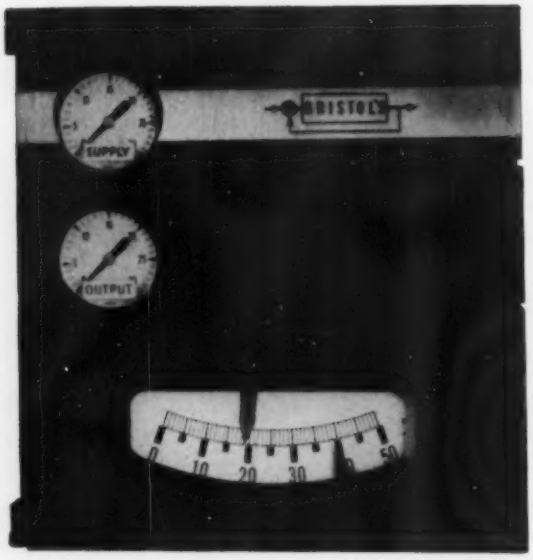
Dyers of natural and synthetic yarns on Franklin compressible spring exclusively.

PHILADELPHIA • GREENVILLE • CHATTANOOGA • FINGERVILLE, S. C.

New York Office . . 111 West 40th Street Providence Office . . 611 Turks Head Building

NEW

BRISTOL'S



Series 624 A/D* pneumatic controller features simplicity and high control stability

- **Simple modular design for ease of servicing**
- **High control stability for closer process control**
- **Designed for batch-type and continuous processes**
- **Proportional and proportional-plus-reset control models available**

Top control performance with maximum simplicity plus standard Bristol precision measuring elements—those are the key features of the Bristol Series 624 Controller. The 624 uses the same renowned elements that have earned such a reputation for accuracy and dependability on other Bristol automatic controlling and recording instruments—perfected through wide experience and many years of development.

Self-contained modular design of the control unit speeds servicing. The whole modular unit, consisting of an aluminum casting with working parts made of stainless steel, Ni-Span C, and Neoprene diaphragms, can be removed by taking out only two screws and a link.

Outstandingly compact, the aluminum instrument case (only 8" x 8" x 5" overall) is completely weatherproof. It is designed for either flush, surface, panel, or valve mounting. Attachments for pipe mounting (2-inch pipe) are available. Write for complete data on the versatile and economical 624 A/D. The Bristol Company, 103 Bristol Road, Waterbury 20, Conn. 0.35

Advanced Design

CONTROLLERS OFFERED FOR:

PRESSURE AND VACUUM: Ranges from full vacuum to 10,000 psi.

TEMPERATURE: Ranges from —100°F to +1000°F.

FLOW AND DIFFERENTIAL PRESSURE: With mercury-type manometer and dry-type differential unit.

LIQUID LEVEL: With bulb unit and mercury manometer and dry-type differential unit.

HUMIDITY: Zero to 100% relative humidity.

CONTROL UNIT CHARACTERISTICS:

PROPORTIONAL BAND: 0-400% continuously adjustable, direct- or reverse-acting.

RESET: 0.1 to 50 repeats per minute.

AIR PILOT: Non-bleed type.

PILOT CAPACITY: 3.0 scfm.

FREQUENCY RESPONSE: Flat to 300 cycles per minute.

TEMPERATURE STABILITY: Less than 0.25% change in the output pressure for 90°F temperature change.

MATERIAL: Aluminum housing; 316 stainless steel internal parts; Ni-Span C feedback element.

BRISTOL... for improved production through measurement and control

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

Proctor makes another friend in the textile industry

Mr. C. W. Schwartz, IV, Proctor Sales Engineer and Mr. Robert J. Verlik, Plant Manager, Stafford Printers, Inc.

Only three months after installing a Proctor Loop Ager, Stafford Printers, Inc., of Stafford Springs, Conn., tells a remarkable success story—one that is being repeated again and again in the textile industry today.

Formerly, all goods were processed through two roller vat-type agers, but output lagged badly behind print machine capacity. With its new Proctor Loop Ager, however, Stafford increased its discharge print production by 85%! Also, thanks to Proctor, aging speed was increased from 40-50 yards a minute to 100-120 yards a minute. As a result, direct labor savings amounted to 60% per yard.

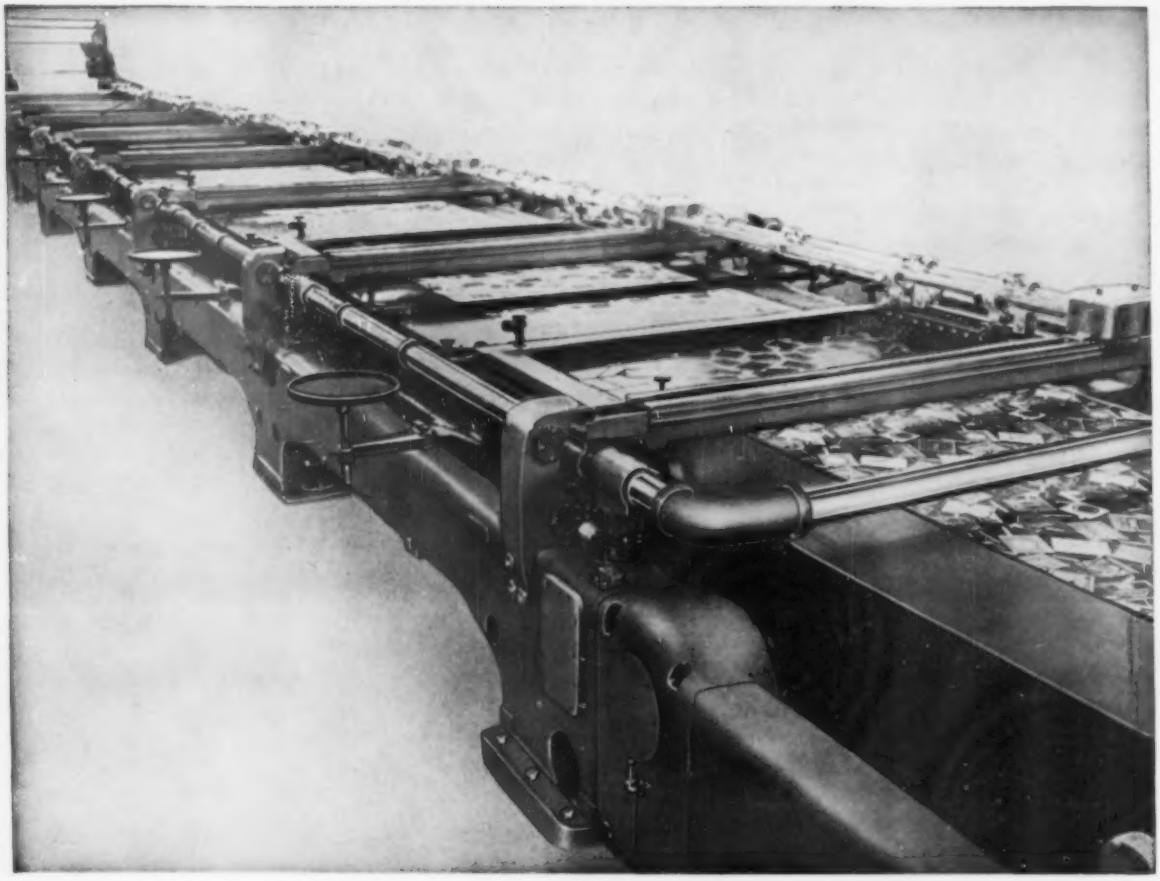
But these statistics don't tell the whole story. Stafford has also realized savings in dye and chemicals. Steam consumption was reduced by 50% per yard; better color yield and improved fixation have resulted.

Is there a weak link in your production chain? If so, take the first step towards making it stronger by contacting your Proctor representative today, or write directly to PROCTOR & SCHWARTZ, INC.

When you modernize with Proctor, you'll be years ahead for years and years.

Proctor

PROCTOR & SCHWARTZ, Inc. 7th Street & Tabor Road, Philadelphia 20, Pa.



Screen Print up to 12 yds. of Fabric Per Minute with an **ICHINOSE-TYPE** Patented MULTI-COLOR AUTOMATIC SCREEN PRINTING MACHINE

The Ichinose Screen Printing Machine, with more than 60 patented features, screen prints all kinds of fabric perfectly in up to 21 colors at nearly double the speed of other machines on the market. Finished prints are of highest quality, clean, sharp, accurate and far superior to hand or roller prints.

Ichinose means greater economy, too, both in initial cost and in operation and maintenance. It consumes less power, steam, and dye paste, while cutting labor costs to only two operators per machine. Change of design and colors takes less than 30 minutes.

Machines with various different repeats up to 72" and fabric widths up to 60" can be supplied.

To ensure complete satisfaction, all Ichinose machines are installed by our own technicians anywhere in the world. Write today to Dept. TW8 for illustrated catalogue and printed fabric samples.

TOSHIN KOGYO CO., LTD.

P. O. Box 367, Osaka Central

OSAKA, JAPAN

(Cable: Autoscreen Amagasaki)

North American Representative:

Edward S. Rudnick, *Representatives*

Olympia Building, P.O. Box 244

New Bedford, Mass.

CIRCLE 103 ON READER SERVICE CARD ⟶

Improve quality–

lower handling costs with...

EAGLE®
easy flow starch

WRITE OR PHONE *Corn Products for expert technical assistance...*
helpful data on these fine products for the Textile Industry:
GLOBE® • EAGLE® • FOXHEAD® • TEN-O-FILM® and CLARO® starches • GLOBE® • EXCELLO® dextrines.

CORN PRODUCTS COMPANY INDUSTRIAL DIVISION • 10 East 56 Street, New York 22, N.Y.

THE FRANKLIN SHEAR-

- with new accuracy
- new uniformity
- new smoothness

Put a whole new face on woolens, worsteds, synthetics, knitgoods and high pile fabrics with this new Gessner finishing machine.

Revolver and knife, anchored to the main frame, reduce vibration and chatter, to produce a remarkably accurate and even cut — every inch of it uniform and smooth. We hope you will want to know more about the Franklin Shear.

DAVID GESSNER CO.

WORCESTER, MASS.

Southern Representative:
Richard A. Herard,
222 Piedmont Bldg., Greensboro, N. C.

Western Representative:
E. G. Paules & Co.,
1762 West Vernon Ave., Los Angeles, California

Canadian Representative:
W. J. Westaway,
Montreal, Quebec; Hamilton, Ontario

CIRCLE 104 ON READER SERVICE CARD

CIRCLE 105 ON READER SERVICE CARD

BRIEFS

on sodium sulfhydrate savings
buying caustic soda
dewaxing cotton quickly

LOOK AT THE LID... AND SAVE

This is a purchasing agent figuring out how many ways he'll save money on his next order of sodium sulfhydrate from Hooker. The lid from our sodium sulfhydrate drum gives him some clues.

Notice its size. A drum with a full open head empties more rapidly than either the regular 14-inch or 18-inch sizes, and empties completely. You save time in handling.

Note, too, that it's brand new, as is the drum. This fact, plus a lacquer lining on lid and drum, makes it next to impossible for the sulfhydrate to pick up troublesome iron and moisture.

The drum itself holds 400 pounds of sulfhydrate — 50 pounds more than older-style drums. It helps reduce handling costs as much as 14%—and saves on storage space. Last, shipping cost per pound of chemical is less.

If *you* aren't getting savings like these with the sodium sulfhydrate or sodium sulfide you buy, it's easy to begin. Just write "Hooker" on your next order—and specify 400-pound drums.

YOU, TOO, CAN BE AN EXPERT

Carry this little booklet in your pocket, and you'll be able to hold your own in almost any discussion of caustic soda buying.

It gives you the basic economics on 50% and 73% liquid caustic, complete with a nomograph for quickly figuring which strength is your better buy.

Another nomograph helps you estimate almost at a glance your liquid caustic requirements for various process solutions.

There's information on solid and flake caustic soda, too; a listing of dimensions and capacities of containers in which you can buy Hooker caustic soda; and a check list of things to weigh when you're deciding on a supplier.

To get a copy, just check the coupon.

HOW TO DISSOLVE A WAX PROBLEM

This boiling solvent, trichlorethylene, is widely used for taking the grease off gears and other metal parts.

But did you ever think of using it to take wax out of cotton? It works—like magic; produces absorbent, well-bottomed cotton goods in a matter of minutes. Goods retain as little as 0.1% residual wax.

A British firm holds the U. S. patent for the process. We'll be glad to put you in touch with the right people if you're interested—and work with you on your requirements for trichlorethylene, which we supply through a nationwide network of distributors.

For more information on Hooker chemicals mentioned, check here and mail with your name, title, and company address.

☐ Sodium sulfhydrate ☐ Caustic Soda Buyer's Guide (booklet)
☐ Sodium sulfide ☐ Trichlorethylene (bulletin)

HOOKER CHEMICAL CORPORATION
1711 Forty-seventh Street, Niagara Falls, N. Y.

Sales Offices: Buffalo Chicago Detroit Los Angeles New York Niagara Falls Philadelphia Tacoma Worcester, Mass.
In Canada: Hooker Chemicals Limited, North Vancouver, B. C.

HOOKER CHEMICALS PLASTICS

At Bigelow-Sanford's Rocky River Mills . . .

CORROSION IS NO PROBLEM . . . WITH HAGAFILM®

One of four dryers handling entire production of plant. Corrosion maintenance on any one could cut production by 25%.

Quick case history: reading time 53 seconds

THE PLANT: Rocky River Mills, Bigelow-Sanford's high production carpet yarn mill, uses some 7½ million gallons of water and generates 4 million pounds steam per week for wool scouring, dyeing and drying.

THE PROBLEM: Rocky River, typical of South Carolina river waters, is never clear; it's loaded with iron, sometimes fertilizer, lignin and tannin. Process steam purity is critical since steam contacts the wool in dyeing and twist setting; and must not corrode equipment in scouring and drying operations.

THE SOLUTION: Hagafilm, a corrosion controlling filming amine, has been added to the plant's steam condensate system since the plant opened two years ago. This preventive maintenance has paid off . . . Joseph Jervis, Plant manager says, "We have had no corrosion downtime to date. Also, Hagafilm does not affect the dyestuffs when it contacts them in our dyeing operations; an important consideration in maintaining the high quality of our dyeing."

The plant reports minimum water problems because of intelligent preventive maintenance initiated since opening two years ago.

THE PRODUCT: Hagafilm is available in liquid and solid forms. It is easy to use and safe, even where contact steam is used. Hagafilm more than pays for itself in controlling corrosion, improving heat transfer, reducing maintenance and downtime. A complete description of Hagafilm is your for the asking. Write for Bulletin 410-12-7.

HAGAN
CHEMICALS & CONTROLS, INC.
HAGAN CENTER, PITTSBURGH 30, PA.

HAGAN DIVISIONS: CALGON CO. • HALL LABORATORIES • BRUNER CORP.

best choice for

BLACK

Black . . . always the ultimate in style and practicability. And to be sure you choose the right black for dyeing nylon, silk and wool, specify LOGWOOD blacks. Check these outstanding performance advantages:

- ★ TRUE BLACK SHADE
- ★ SUPERIOR FASTNESS OF COLOR
- ★ ACTUAL WEIGHT INCREASE
- ★ LOW COST
- ★ NO HARMFUL EFFECT ON FIBERS
- ★ SIMPLE METHOD OF DYEING

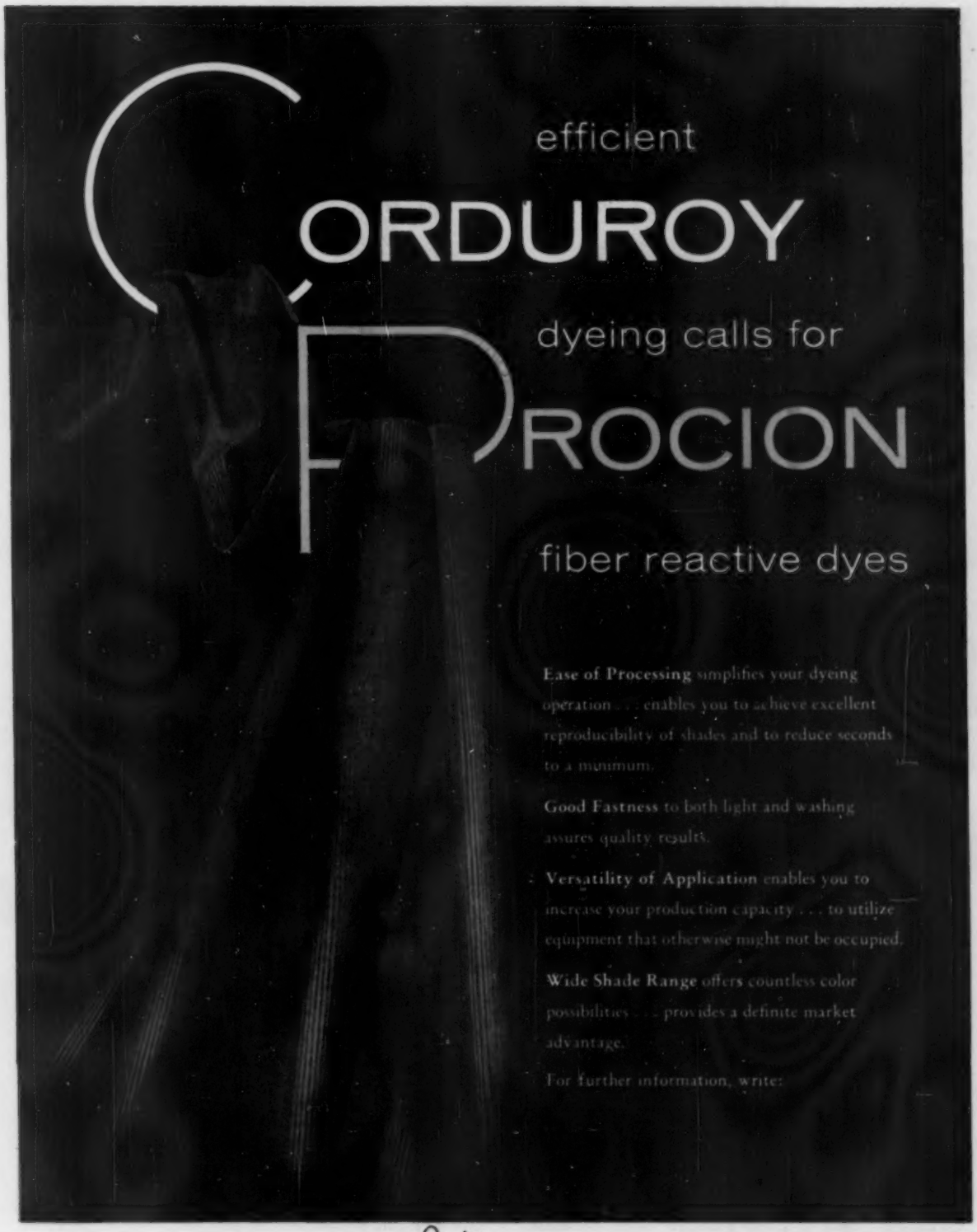
Veteran chemists and dyers all over the world depend on LOGWOOD when they want the best in black. Available in powder, crystal and liquid forms. Write today for detailed information.

U. S. Distributor

AMERICAN DYEWOOD CO., INC.
374 MAIN ST., BELLEVILLE, N. J.

The West Indies Chemical Works, Ltd.
70 Wall St., New York 5, N.Y.

CIRCLE 250 ON READER SERVICE CARD


efficient
CORDUROY
dyeing calls for
PROCION
fiber reactive dyes
Ease of Processing simplifies your dyeing operation . . . enables you to achieve excellent reproducibility of shades and to reduce seconds to a minimum.
Good Fastness to both light and washing assures quality results.
Versatility of Application enables you to increase your production capacity . . . to utilize equipment that otherwise might not be occupied.
Wide Shade Range offers countless color possibilities . . . provides a definite market advantage.
For further information, write:

Procion and the processes for its use and application to textiles are the subject of patents and patent applications in the U.S.A. Trademarks of I.C.I. Ltd.
103-0

Quality AHCO PRODUCTS Integrity

ARNOLD, HOFFMAN & CO., INCORPORATED
55 Canal Street, Providence, Rhode Island • Est. 1815
A Subsidiary of Imperial Chemical Industries Limited, England
West Coast Representative: Chemical Manufacturing Company, Incorporated of California

CIRCLE 107 ON READER SERVICE CARD

VINOL

polyvinyl alcohol

SOON ON THE WAY TO MILLS

Airco VINOL Polyvinyl Alcohol in grades designed for use as warp sizes, thermosetting resin modifiers, finishes, binders for nonwovens and ribbon.

Available soon, Airco VINOL—a group of polyvinyl alcohol resins tailored for specific uses—has unusual versatility . . . is moderately priced. In many textile applications, it warrants comparison with starch, casein, latex and other synthetic resins. Whether you are using polyvinyl alcohol or a competitive material, Airco VINOL offers you advantages in sizes, finishes, and binders.

VINOL polyvinyl alcohol resins provide a wide range of characteristics such as water solubility, water resistance; adhesion to porous or non-porous surfaces; toughness, flexibility. Other key properties are resistance to grease, solvents, rotting and tearing.

VINOL grades represent a range of properties, reflecting differences in degree of hydrolysis and polymerization. However, all dissolve easily in water and form colorless solutions; all have little tendency to dust. Airco's exclusive continuous manufacturing process turns out resins of consistently high quality, free from variations typical of batch processing.

To receive the latest information about VINOL polyvinyl alcohol resins, let us put your name on our mailing list. We'll be glad to send you samples and technical bulletins as they become available.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND . . .

AIRCO

AIR REDUCTION CHEMICAL COMPANY

A division of Air Reduction Company, Incorporated
150 East 42nd Street, New York 17, N. Y.
Represented Internationally by Airco Company International

Down
with
finishing
costs—
safely!

"AC" catalysts help you achieve finer results at lower cost—through longer resin bath life, faster more complete curing of thermosetting resins, with minimum resin add-on. And Monsanto AC Catalysts are compatible with practically all finishing agents. Write for complete technical data, and expert finishing counsel, to Monsanto Chemical Company, Plastics Division, Room 746, Springfield 2, Mass.

Monsanto

MONSANTO DEVELOPER IN **PLASTICS**

Other Monsanto textile chemicals: Resloom® E-63 chlorine resistant resin; Resloom E-50 cyclic urea resin; Resloom HP and M-75 melamine resins; Slymer® sizes; Lytron® polystyrene latices

CIRCLE 109 ON READER SERVICE CARD

costics *(or, how to pinpoint your caustic costs)*

Caustic economy consists largely in choosing the right grade. Wyandotte offers liquid caustic in 50% and 74% concentrations, and anhydrous caustic in six forms . . . including a special grade for rayon. Which for you? Your Wyandotte representative will be happy to apply his broad experience in caustic selection to your particular problem. Call on him. *Wyandotte Chemicals Corporation, Michigan Alkali Division, Wyandotte, Michigan. Offices in principal cities.*

CIRCLE 251 ON READER SERVICE CARD

ATTENTION...

CHEMISTS, DYERS FINISHERS and all those engaged in Chemical Treatment Process

The new FACT FILE issue has 16 pages of useful handbook-type information on bleaching, dyeing, finishing techniques.

FIRST from BALTIMORE

BENJAMIN HENFREY, of Baltimore, lighted the FIRST room in the United States with GAS in 1802.

Also lighted a street corner, in Baltimore, with gas...the FIRST PUBLIC STREET thus lighted in this country.

The GAS LIGHT COMPANY of BALTIMORE, founded in 1816, was FIRST Company in the United States organized to manufacture gas for street lighting and general use.

AND ALSO FROM BALTIMORE...

YOUR FIRST CHOICE IN BLACKS

- DIRECT
- ACID
- DEVELOPED
- ACETATE
- FORMALDEHYDE
- LOGWOOD

THE HOUSE OF BLACKS

Consult your local dyestuff distributors for information and samples. Shipments can be made from our Baltimore factory.

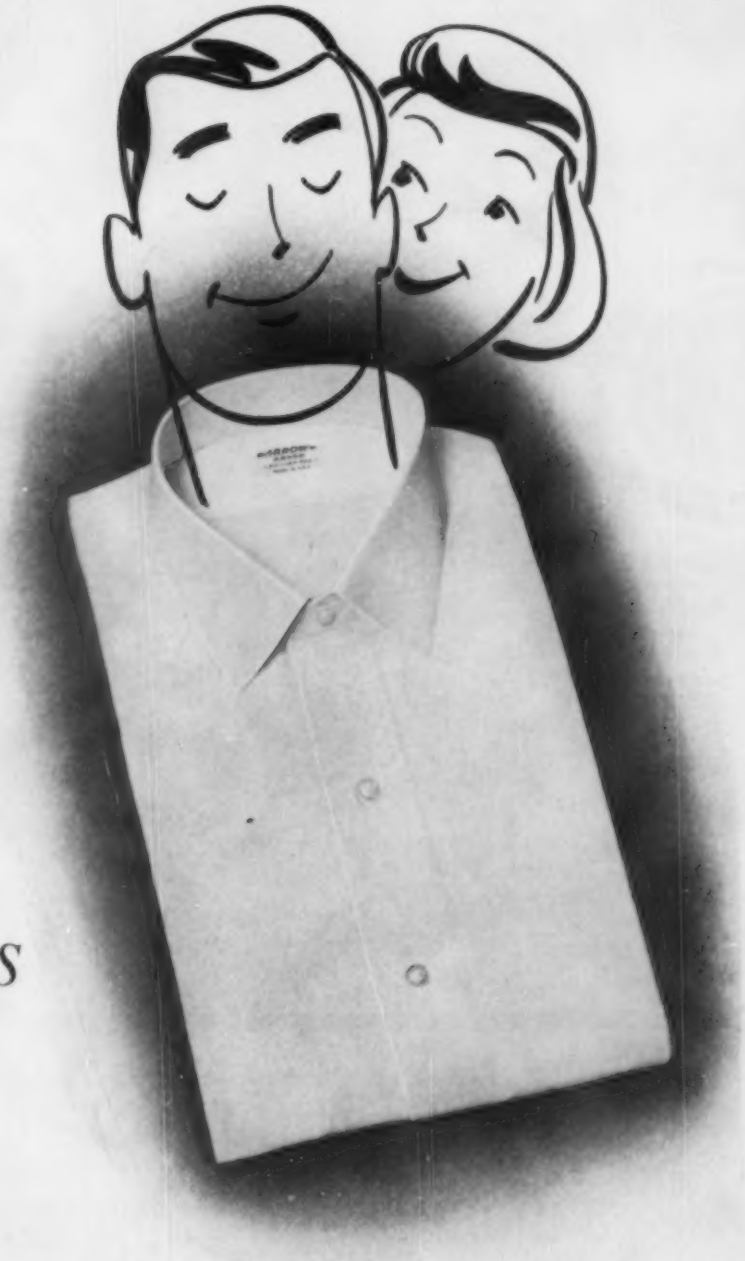
Courtesy – The Baltimore News-Post

YOUNG ANILINE WORKS, INC.

OFFICE AND FACTORY: 2701-2733 BOSTON STREET • BALTIMORE 24, MARYLAND

Solvay Activated Hydrogen Peroxide Bleaching Process gives

a whiter, brighter white to Arrow shirts



You always look your best in an Arrow shirt . . . there's good reason. Cluett, Peabody & Co., Inc., maker of Arrow shirts, puts full emphasis on highest quality production. And that's the major reason they have adopted the *Solvay Activated Hydrogen Peroxide Bleaching Process.* It produces better hand and superior whiteness without harm to the goods.

Like Cluett, Peabody & Co., Inc., you can use the Solvay Activated Hydrogen Peroxide Bleaching Process to obtain higher quality, whiter cottons at no increase in cost. Or, if you prefer, you can get whiteness equal to your present results with a marked decrease in chemical costs.

Although the Solvay Activated Hydrogen Peroxide Bleaching Process is a relatively new method developed by the Solvay Process Division for bleaching cotton, it is already in full-scale, commercial operation in a number of plants. It is available to you under royalty-free license.

Solvay technical service is available, without obligation, to help you evaluate this new process for your plant. Or, send for Solvay's free booklet which gives a complete description of the techniques and results you can expect.

Free technical bulletin—Fully describes details of the process . . . applications, advantages, cost analysis and comparative quality. It's free . . . no obligation . . . write Solvay today.

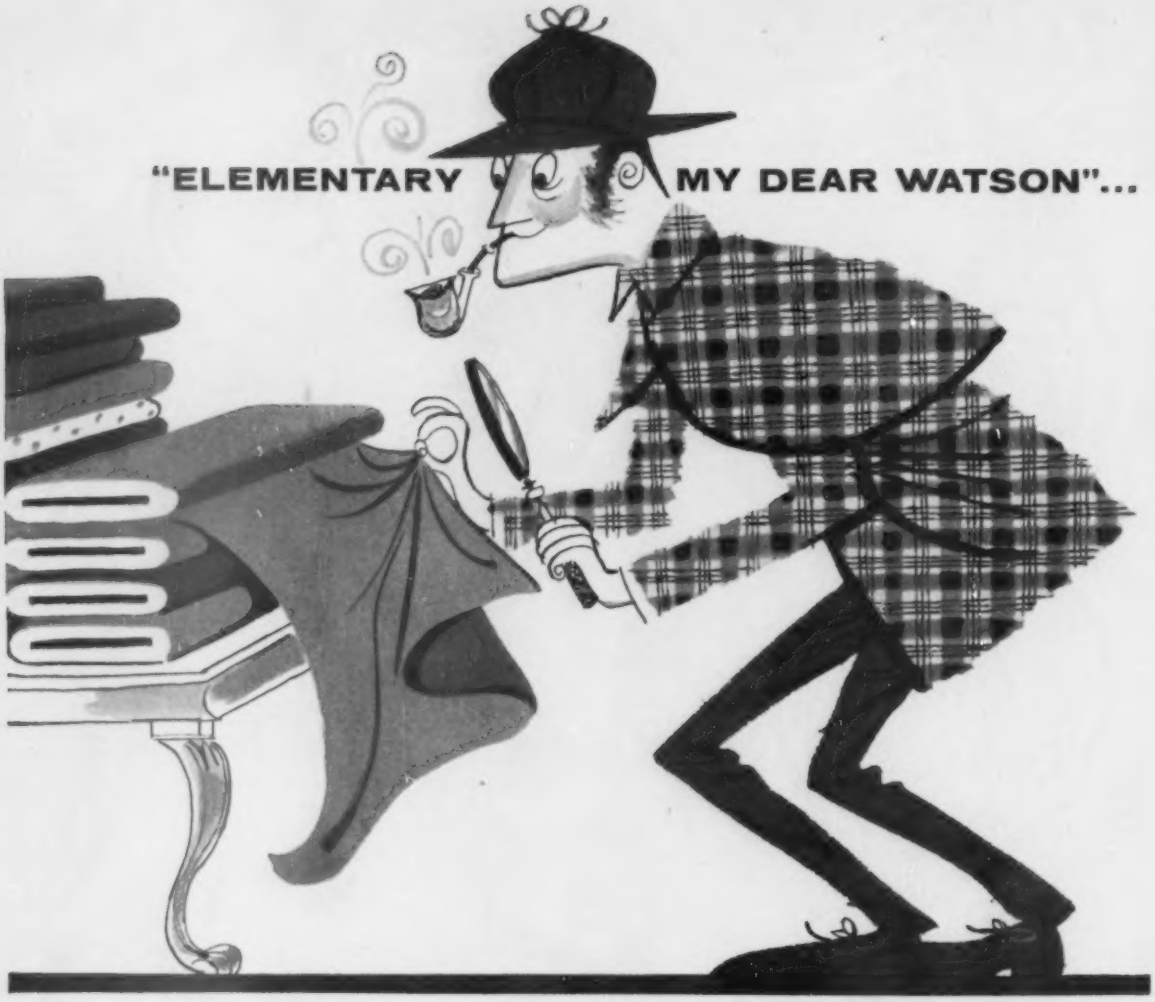
SOLVAY® CHEMICALS FOR TEXTILES

Caustic Soda • Chlorine • Hydrogen Peroxide • Sodium Nitrite
Mutual® Chromium Chemicals • Potassium Carbonate • Soda Ash

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N.Y.

CIRCLE 111 ON READER SERVICE CARD 111



CLINTON Corn Starches give a more uniform application of size

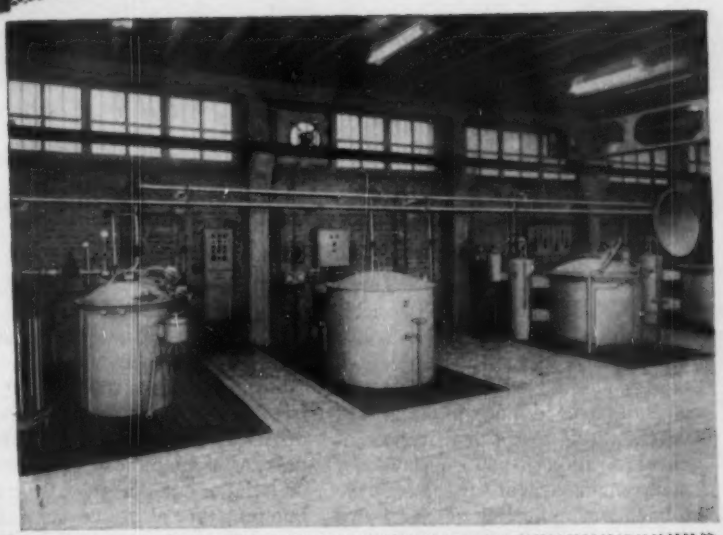
Clinton Corn Starches provide uniform application of size and increased starch penetration for smooth warps and minimum shedding at the slasher and loom. See your Clinton salesman today.

CLINTON TECHNICAL SERVICE is freely available upon request.

CLINTON

CLINTON CORN PROCESSING COMPANY, CLINTON, IOWA

H. KRANTZ
Maschinenfabrik
AACHEN

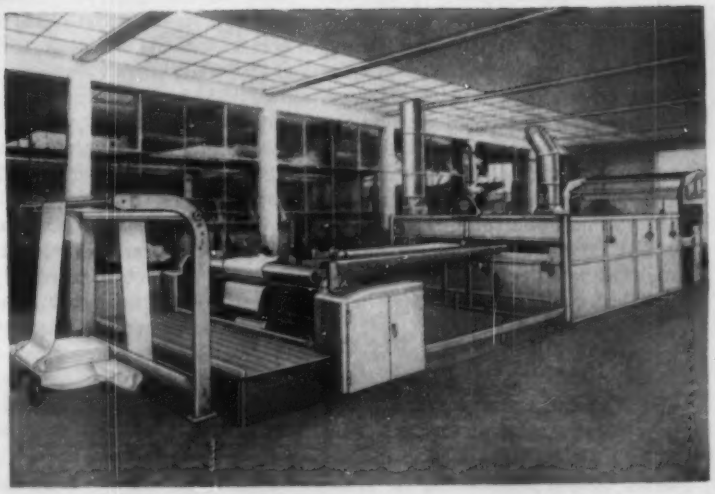


Modern KRANTZ h'gh temperature dyeing plant with rapid dryer, being equally suitable in particular for handling synthetic fibres like Diolen, Trevira, Terylen etc. in form of loose material, tops and cheeses.

Technical advice on request

H. KRANTZ SÖHNE
Apparatemaschinen-Fabrik
AACHEN

KRANTZ



Special type stenters for drying and setting of woven and knitted goods.

Perfect finish of cloth even at greatest width.

Please, contact us for getting detailed proposals.

Modern KRANTZ-Machines allow big savings.

COMBINE OF TEXTILE MACHINERY MANUFACTURERS
COMBITEX

CIRCLE 113 ON READER SERVICE CARD 113

Why You Need Preventive

Mill after mill today is beginning to feel the pressing need for a plant-engineering program. In fact, with mill operations getting more complex every day, a plant engineer is a "must." Here are some basic concepts of what plant engineering is and what it can do for you.

'PLANT ENGINEERING is a big and important job in the textile industry. Management's concept of the plant-engineering department has not changed much in the last 20 years. A big reason is that those of us in position to do so have not made management aware of the tremendous potential value of this department to the mill operation. The textile industry is lagging far behind other industries here."

That's what R. M. Watson, plant engineer, Drayton Mills, Spartanburg, S. C., told the Second Southeastern Plant Engineering Maintenance Seminar held recently at Raleigh, N. C. But that's not all he told the group. He spelled out —step by step—concrete suggestions for setting up a plant-engineering program that could well be the foundation for a good, solid engineering department in any mill. To find out what he said and how it hits you and your mill, read on.

The functions of a typical plant-engineering department can be classified under five headings:

1. MAINTENANCE

It falls into three categories:

• **Retentive maintenance.** This type of maintenance is designed to insure proper functioning of plant and equipment throughout a normal, useful life. Lubrication, cleaning, and painting are good examples. Some jobs in this classification can be scheduled on a regular, routine basis that requires no prior inspection and no record keeping. Other jobs may require some record keeping and more flexibility in scheduling. For instance, if you use a one-coat painting system, you know that generally you get from 4- to 8-years service from a paint job. You then set up the painting schedule for the year by inspection of the areas indicated on the record.

• **Preventive maintenance.** This operation provides for orderly repair or replacement of worn-out material or equipment. As the name implies, the objective here is to prevent shutdowns and costly repairs resulting from the malfunction or breakdown of equipment at inopportune times. A good preventive-maintenance program demands three essentials, as follows:

Inspection is probably the backbone of the program. The first question to arise is: "What should be included in the inspection program?" The obvious answer comes back: "Everything that is used is eventually used up and in the process requires maintenance and repair. Therefore it should be inspected."

Rather quickly, it becomes obvious that a formal inspection program, with checklists, record keeping, and other paperwork, if applied to everything in the plant, becomes unwieldy and impracticable. So the formal inspection program becomes a compromise that requires careful study and consideration by the plant engineer.

Economic factors often provide some answers. For example, Drayton Mills does not include loom motors in its formal inspection program. Reason: the retentive-maintenance program, which consists primarily of lubrication on a regular schedule, also encompasses visual inspection and keeps losses at a relatively low level. A program of regular take-down inspection, cleaning, and painting cannot be justified economically.

The importance of equipment to the over-all operation is also a major consideration in determining the attention it receives. For example, all air-conditioning-equipment rooms are patrolled every 4 hours. Refrigeration equipment is logged every 2 hours. Each piece of this equipment is set up on the formal inspection program. Fans are inspected quarterly. Air washers are inspected annually (in addition to the inspection during the regularly scheduled cleaning programs). Refrigeration machines are inspected annually. We follow this somewhat rigid program because failure of this equipment would result in serious impairment —and possibly complete shutdown —of manufacturing operations in the areas affected.

Another major consideration is the ultimate effect of a component failure. If the failure of a $40 bearing might result in several-thousand-dollars damage to a machine, then that bearing deserves your careful attention.

Still another major consideration is safety. You should include in the inspection program any equipment whose malfunction or failure constitutes a serious hazard to operating personnel. (See "Easy Way to Save $3000," page 66.)

A word of caution: In setting up an inspection program, the tendency is to overdo it. It looks fine to have complete records. But it takes time to make inspections and keep these records. And you now have enough labor to be burdened with nonessentials. So, before including an item in the formal inspection program, be sure there is a real need to have it there. Include as much inspection work as is practical in the regu-

Maintenance—and How to Get It

larly scheduled retentive-maintenance program. There is no reason, for example, why the motor oiler can't observe the condition and alignment of the drive while blowing down a motor or lubricating the bearings. He simply has to be trained to see what he looks at.

Another thing. Too much inspection can sometimes cause more trouble than no inspection. Some years ago we discovered that our mill got better service from atomizers if they were left alone than when they were taken down for regular inspection and repair. Now an atomizer is taken down only when it ceases to function properly.

Planning and scheduling. Minor corrections and adjustments can be made at the time of inspection. Some jobs can be scheduled by the supervisor alone. Major jobs may require consultation among two or more supervisors, the master mechanic, the plant engineer, and sometimes the plant superintendent or plant manager. Such factors as procurement of materials or equipment, time required to perform the work, methods to be employed, coordination with production schedules, and other maintenance work all have to be considered.

While other industries apparently are successful in using full-time work schedulers for maintenance work, Drayton gets better over-all results by requiring each supervisor to do his own prime scheduling.

Performance of the work is under the direction of the supervisor involved. Here again, magnitude and complexity determine the assistance the supervisor can expect from the master mechanic or the plant engineer or both.

Follow-up. This is generally the responsibility of the master mechanic, with occasional prodding from the clerk in the plant engineer's office. Inspection reports are filed in the tickler file until corrections have been completed. At this time they are transferred to the permanent files and become a part of the historical data.

• **Breakdown or emergency maintenance.** This is the replacement of material or equipment that has ceased to function. The primary purpose of the two programs is to limit work in this category to a tolerable minimum. Major breakdowns have a way of occurring at the most inconvenient times, such as 2 o'clock in the morning or midnight Sunday or just before the boss is going to take the board of directors through the mill. However, if just one major breakdown can be avoided by your retentive- and preventive-maintenance programs, the cast and effort that go into the programs will be more than justified.

Generally in the textile industry, the plant-engineering department is responsible for the maintenance of (1) all the plant's service equipment such as air conditioning, boilers, air compressors, elevators, water system, sewage system, and electrical system; (2) buildings and building services; (3) yards and grounds including lawns, shrubbery, and parking lots; and (4) some production equipment such as slashers and finishing equipment.

Many maintenance functions are still performed by the production departments. **But the time has come when the industry should begin to work toward a goal of establishing a single responsibility for all maintenance functions. In fact, it is dragging its feet in this respect.**

2. OPERATING

The plant engineer's office is not usually considered an operating department. But in some plants, this department is responsible for the operation of more equipment than any other department in the mill. Included in this function are:

Service equipment.—Air conditioning, boilers, water system, sewage system, compressed-air system, electrical system, motor vehicles (including lift trucks), and lawn mowers and tractors.

Shops.—Machine shop, carpenter shop, pipe shop, electrical shop, welding (including metallizing), instrument-repair shop, paint shop, sheet-metal shop, and roller shop in some mills.

The operating function also includes the salvage department in some mills.

3. CUSTODIAL

Custodial functions usually assigned to the plant-engineering department include:

Sanitation.—Restrooms, building cleaning, floor maintenance, trash disposal, and village garbage collection and disposal.

Plant security.—Police, watchmen, and fire protection.

4. SPECIAL SERVICES

Special services rendered by the plant-engineering department include the following:

Engineering.—Design work (including plans and specifications as required), cost estimates, preparation of contracts and specifications, utility cost control (power, steam, water, fuels, and compressed air), and machinery layouts. Other functions include new construction and modifications, moving machinery, and insurance inspections.

5. MISCELLANEOUS

In this classification are listed functions not usually assigned to the engineering department but included at some mills. These are supply room, warehouse, wastehouse, plant-wide lubrication, surplus equipment, and plant-asset inventory.

PLANT ENGINEER: BIG MAN

It's apparent that the duties and responsibilities of the plant engineer extend far beyond his technical work. He has to be a good organizer. He has to be an administrator and executive. He has to be a teacher. And he should be a good promoter.

Take a closer look at his responsibilities: *. . . Turn the page*

Work force. First, the engineer has to organize and maintain a well-trained, disciplined work force to perform the assigned work. Immediately he is faced with problems peculiar to maintenance work. The very nature of the work makes it impossible to apply normal methods of establishing work loads. How then does he establish the size of his labor complement? Drayton Mills tries to do it by controlling the backlog of work. The first principle is "never catch up." Always have some work ahead. If the backlog gets to big, it may be necessary to add temporary people or call in outside contractors.

MEASURING PERFORMANCE

How does the engineer measure performance? Most methods are unsatisfactory in some degree. But successful supervisors in maintenance work have at least one thing in common—they learn to judge a workman's performance by the results he gets. They have to do this because so much work is done in scattered locations by individuals or small groups, and direct supervision is impractical.

The heart of the maintenance organization is supervision. Not many years back maintenance was headed by a master mechanic who mostly—by main strength—had learned how to operate the machine tools in the shop and who could "fix anything you send down there." He expected his men to do "what he told them, when he told them, and how he told them." As often as not he didn't want his men to learn enough to threaten his position.

Today, the master mechanic is just as important as ever—maybe more so. But with the complexity of today's operations, the picture is vastly different. He can't do the job by himself any more.

In the modern mill the electrical department and the air-conditioning department have caught up with the machine shop in size and importance. All have become tremendously more complex. So now the master mechanic needs men in these departments who not only are highly skilled technicians but who must also shoulder the burden of first-line supervision.

Where are these men coming from? There is no pool to draw from. So they have to be carefully selected and trained. In-plant courses in supervision and short training schools offered by equipment manufacturers should be utilized. Trade magazines should be provided, and the men should be encouraged to read them. Home-study courses should be encouraged. The men should be encouraged to attend conferences at company expense. And the plant engineer should provide encouragement by taking time occasionally to discuss with the men their various problems.

The plant engineer also has these same responsibilities toward the rest of his organization. In addition, he should assist the master mechanic and his other overseers in making periodic appraisals of their people. This is essential in promoting the continuing growth and development of key men. He should also appraise his overseers periodically and advise them accordingly.

Department functions. The plant engineer is responsible for the direction of all the functions of his department. These include planning, scheduling, inspection, and follow-up; establishing operating procedures; cost control; operating and maintenance records; requisitioning of supplies and approval of invoices.

The plant engineer should always keep in mind and constantly remind his entire organization that theirs is a service organization whose every effort should be directed toward keeping the mill running and producing a quality product at minimum cost.

Engineering. With all these responsibilities, it is obvious that the engineer as an individual hasn't enough time left to do major design work. But he does consult with outside engineers and architects on major work and does many smaller jobs himself. He prepares cost estimates, contracts, and specifications. He acts in the capacity of resident engineer on major construction and installation projects. And most important of all, he applies his engineering knowledge to the daily problems that arise in the operation and maintenance of a complex and complicated industry. His problems are so diverse that he must be well grounded in electrical and mechanical engineering and have at least a nodding acquaintance with civil and structural engineering. Even a smattering of chemistry comes in handy.

Liaison with management. The relationship of the plant engineer to the rest of the mill management is vitally important. What are his responsibilities here?

First, he is the source of information and advice on technical problems within his area. It's his responsibility to lend all possible assistance in working out ideas for improvements in processes or equipment. It is also his business to discourage ideas that are basically unsound. He should:

- Advise with management on the purchase of new and used machinery.
- Keep management informed on the condition of the plant.
- Keep management informed on the capacity of utilities and service facilities.
- Advise with management in working out a sound and comprehensive maintenance and operating budget.
- Show initiative in his contacts with management.

NOW—THE WRAP-UP

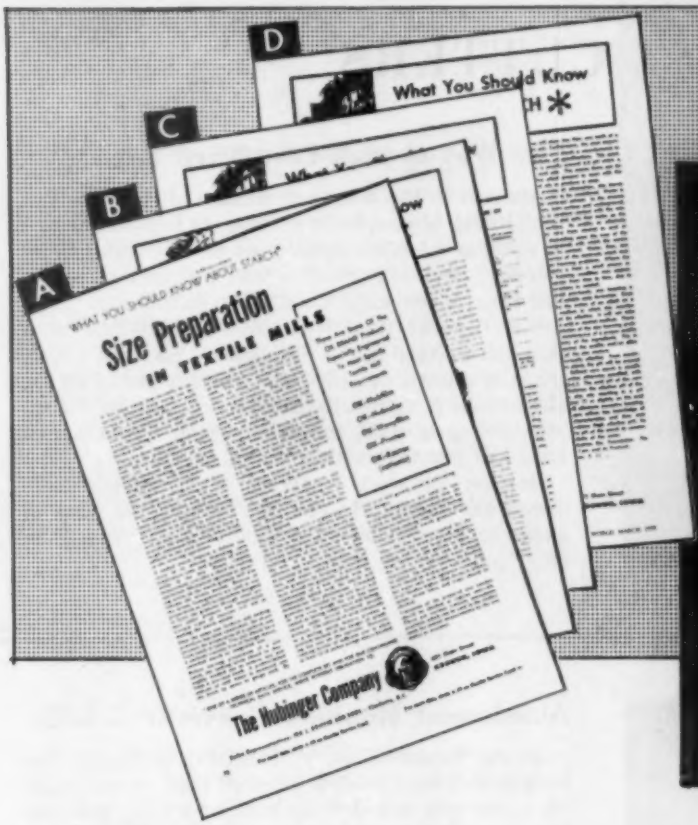
1. A plant engineer is not a master mechanic, and a master mechanic is not a plant engineer. The jobs are entirely different, yet each supplements the other.

2. The industry needs to pay adequate salaries to attract and hold competent plant engineers and master mechanics and other overseers in this department.

3. Adequate clerical help should be provided in this department to maintain the records and lessen the burden of paperwork on the supervisory force.

4. Other industries as well as other mills are competing for your highly trained, skilled men. You can't afford to lose them.

5. You must at all times keep in mind the ever-increasing need for greater skill to operate and maintain more highly trained men of even the equipment in today's modern mill, which daily becomes more complex.



FREE... for your files...

INFORMATIVE TECHNICAL ARTICLES ON TEXTILE STARCHES

Titled "What You Should Know About Starch," this series of articles covers such subjects as:

- **A** Size Preparation in Textile Mills
- **B** Size Foaming—Its Cause And Cure
- **C** Acidity and Alkalinity—Significance of pH
- **D** New Improvements in Slashing

Here are some of the Hubinger OK BRAND Products especially engineered to meet specific requirements of the Textile Industry:

OK—Hubfilm
OK—Hubclor
OK—Waxyfilm
OK—Printex
OK—Keotac
(cationic)

A complete series written by Textile Specialists of The Hubinger Company

During the past several months, as a service to all our friends in the Industry, we have presented a series of technical articles concerning textile starches. Reprints of these information-filled articles, as well as future articles, are available to you in convenient filing form just for the asking. Simply fill out the coupon below, and we shall be happy to send them to you.

The Men From Hubinger—trained specialists in textile starches—are at your service (without obligation) to help you with any starch related problem you may have. Phone or write—we shall welcome the opportunity to serve you in any way we can.

The Hubinger Company

KEOKUK, IOWA

OK, please send me, without obligation, reprints of your textile starch articles checked below: A B C D

All future articles:
Information about: .....

.....

NAME .....
TITLE .....
COMPANY .....
ADDRESS .....

TEXTILE WORLD . . . COST CUTTERS

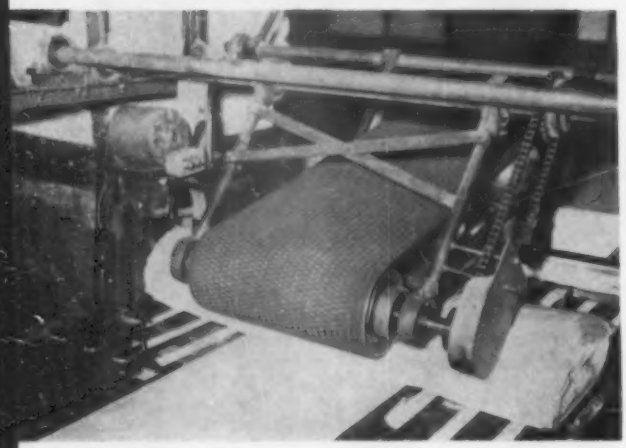
Fast Way to Pick Lost Warp Lease

It's easy to lose a lease at slashers at A. Schottland, Inc., Rocky Mount, N.C., because it's common to have as many as 63 fabric styles in up to 74 colors running at once. But Schottland is well prepared to pick a new lease in the warps quickly and at low cost.

The A-girder frame (photo) is just 10 feet away from the delivery end of the slasher. So when a lease is lost in a warp, the loom yarn beam is placed on top of the frame as soon as the beam is doffed at the slasher.

In his spare time, the slasher helper picks a new lease and inserts new lease strings.

Because the work is always at the proper level, there's no strain. He can stop picking the lease to return to his regular work without losing time from either job.

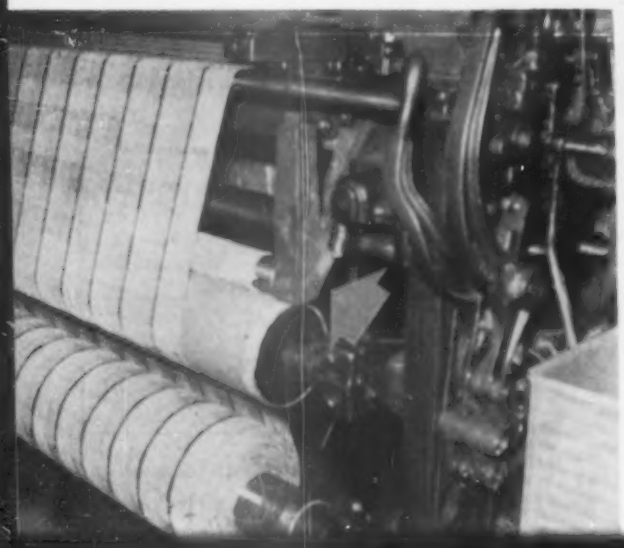


Attachment Monitors Conveyor Traffic

At the Waterford, N. Y., bleachery of Cluett, Peabody & Co., Inc., finished goods off hookers are placed on a conveyor that delivers bolts to a tying machine. The latter is mounted over a short conveyor that delivers tied bolts to the shipping area.

The typing machine replaced several girls who had been stationed behind the hookers to tie bolts and place them in trucks.

But to get more complete automation, former Plant Engineer W. T. Carpenter developed the feeding monitor (shown in the photo). As pieces come down the main conveyor, the belt of the monitor pulls them into the tying machine and delivers the tied pieces. But if pieces come too fast, the monitor shuts down the main conveyor until the tying machine can catch up.



Want to Run Saran on Standard Looms?

When Fawcett & Grant Ltd., Huntingdon, Que., recently expanded its line of woven fabrics from men's and women's fine wool and worsted goods to include saran fabrics, it ran into this problem:

The fabric slipped from around the take-up roll when a roll of fabric was doffed (or even when a loomfixer raised the roll of cloth to go under the loom to adjust a harness cord or similar work).

Looms are W-3 looms with low-roll take-ups. By adding a new stand for the pressure roll, there's no more slipping on the saran.

The stand is an iron casting open at the bottom to take a plunger that rests on the pressure-roll bearing. A heavy spiral spring rests on top of the plunger. Setscrew in bearing adjusts tension on pressure roll.

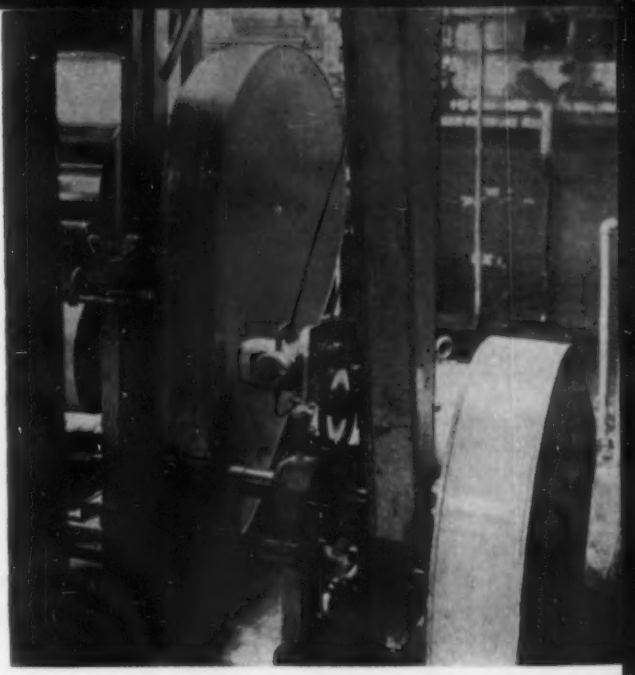
Cutting Losses and Breakdowns

A Southern mill maintains the right tension between pads and tenters with this Foxboro Type 16A Speed Transmitter, which is shown here attached to pad.

Similar unit is attached to the drive shaft of the tenter. Pneumatic signals, proportional to pad-roll and tenter-chain speed, are received from the two transmitters by a simple pressure recorder that makes a record of the amount of stretch applied to the cloth.

One saving is that there are now no break-outs due to excess tension in the finishing range. More important, yardage losses (can be as high as 2%) from too-slack operation are avoided.

A quality-control advantage from use of this equipment is its ability to duplicate running conditions from lot to lot by reference to the records.



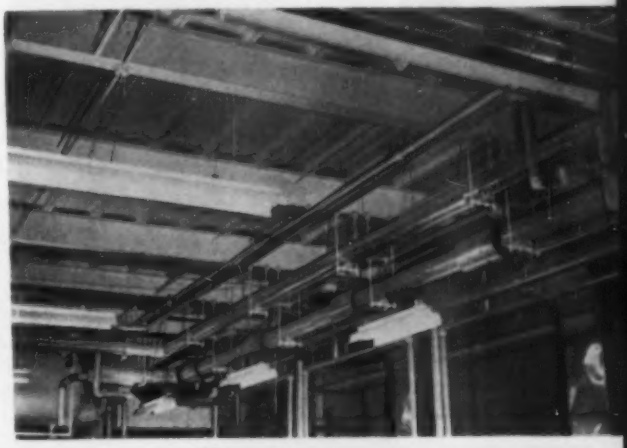
Quick Cure for Heat Losses

Piping insulation jacketed with corrugated aluminum does multiple service in the new plant of P. H. Hanes Knitting Co., Winston-Salem, N. C.

Steam and condensate return lines are insulated with Pittsburgh-Corning foam glass while submains and branches use cellular asbestos or manganese. Cold-water lines are insulated either with Pittsburgh-Corning foam glass or cellular fiber glass.

Various insulations either conserve heat or eliminate condensation drip.

Corrugated-aluminum jacketing (Alcoa or Reynolds Metals) as the protecting shield, which comes in rolls and is banded to the insulation with aluminum strips, requires no maintenance, no cleaning, no painting, and makes tap-ins relatively easy.



Sealer Permits Transparent Packaging

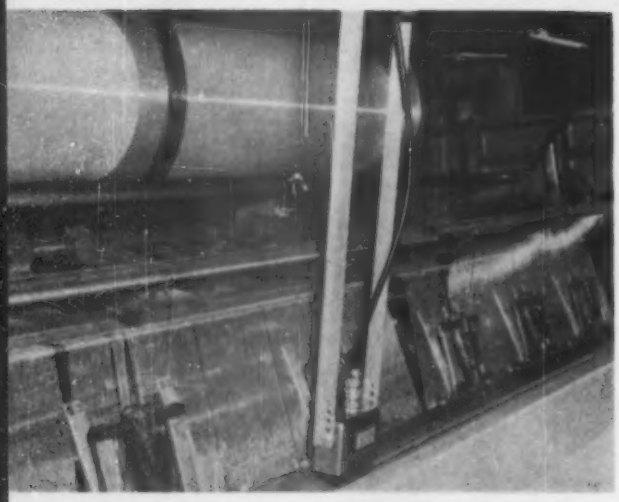
Bedspread packaging at Brooker Spread Co., Dalton, Ga., is semiautomatic with a sealing machine added to end of packaging line.

A girl puts tufted bedspreads into a polyethylene bag open at one end. A conveyor carries this open package to a second girl. She aligns the two sides of the open end and inserts them through two electrically heated bars of the machine.

Then the top bar lowers itself to contact the lower bar sealing the bag. Surplus material is cut off to make a neat edge.

Transparent package shows off Brooker's 100 styles of tufted bedspreads, each in many colors. Most yarns used are cotton, but there's also a big percentage of viscose yarn. Yarns are 8/2, 8/4, 8/6, and 8/8.

COST CUTTERS . . . *Begins on page* 118



Electronic Scanner Detects Flaws

High-speed tricot machines can produce an 18-in. defect in less than a minute. Solution? Milco Undergarment Co., Inc. of Bloomsburg, Pa., has reduced the length of defects by the use of an electronic scanner developed by the Appalachian Electronics Co.

Scanner makes complete pass across 168-in. width of knitted fabric in about 10 seconds. This reduces maximum length of any defect to three inches. When the scanner detects a flaw, it stops the machine and a red light flashes.

Operating on light reflection, the sensitivity of the scanner can be adjusted to detect broken filaments as well as broken ends.

Milco anticipates that once all its tricot machines are equipped with these scanners they not only will have improved quality but will be able to reduce the number of knitting patrollers.

Machine Speeds Up Bobbin Painting

A mill-built bobbin-tip painter has speeded up bobbin painting about 400% at Parkdale Mills, Inc., Gastonia, N. C. The simple machine makes it possible for an operator to paint 15 bobbins per minute, whereas formerly he could only paint three or four.

The painting machine basically consists of a spindle driven by a small motor and a spiked belt conveyor. A bobbin to be painted is slipped over the revolving spindle, and the operator touches its tip with a paint brush. One second is long enough. Then holding the brush in one hand, the operator quickly lifts the bobbin off the spindle with the other hand. And in the same motion he slips it over a nail or spike set in the endless belt.

The belt has 368 spikes and is timed so that it takes 15 minutes to move a bobbin from one end to the other, during which period the paint dries.

Putting a Stop to Weight Complaints

From time to time, customers used to challenge the weight of yarn cartons shipped by Carolina Mills, Maiden, N. C., despite the fact the yarn was carefully weighed and the correct amount marked on each carton.

These complaints required considerable time and effort to straighten out, either by letter or by long-distance telephone. To eliminate this problem, Carolina installed a Toledo print-weight scale in each plant manufacturing sales yarn.

The yarn packer now sticks a slip on each carton showing its printed weight before it leaves the packing room, which automatically eliminates any possibility of human error. The psychological effect of the printed slip on the customer has been remarkable. There simply haven't been any complaints since the system was installed. In addition to improved customer relations, now there's less effort for the operator and time is saved in explanations.

TEXTILE WORLD . . . News from the Mills

Abney Mills, Greenwood, S. C., is adding a $137,000, 30,000-sq.-ft. addition to the Toxaway Div.'s southside plant at Anderson.

American Carpet Mills, Inc., Dalton, Ga., is moving its Dalton operations to a newly constructed $2-million plant at Cartersville, Ga.

Angier Knitting Corp., Inc., Angier, N. C., has started building a 16,000-sq.-ft., steel-framed, air-conditioned building at an estimated cost of $75,000. The plant will manufacture nylon-cotton knit goods.

Belding Hemingway Co., Inc., New York, N. Y., will acquire Carl Joseph Co., Inc., and Industrial Fiber Glass Finishing Corp., both of Kulpmont, Pa. The newly formed organization will be known as Belding Corticelli Fiber Glass Fabrics, Inc., and will specialize in the weaving of decorative and industrial fiber-glass fabrics.

Beltex Corp., Belmont, N. C., is being consolidated under one roof. By the first of the year, 27,000 square feet will have been added to the knitting plant's original 13,000 square feet.

Blair Mills, Inc., Belton, S. C. has installed Whitin M-6 Even Draft drawing frames leased from Whitin Machine Works. The installation cost about $40,000.

Borg Fabric Div., Delavan, Wis., has announced a $345,000 addition to its plant at Jefferson, Wis., as a part of the Amphenol-Borg Electronics Corp.'s $4.5 million building program. The addition, which will add 47,500 square feet of space, will be used for warehousing and installations of machinery for the new knitting operations.

Bothwell Mills, Inc., Newton, N. C., is doubling production facilities, bringing its total number of knitting machines to 169.

Chase Bag Co., Goshen, Ind., has installed new dye jigs, 95 feet long and 14 feet high, in the company's open-mesh-fabric plants at Goshen, Ind., and Portland, Ore. The new jigs are equipped with a special tentering frame to control shrinkage and prevent the development of bias.

Fieldcrest Mills, Inc., Spray, N. C., has completed construction of its electric-blanket plant in Smithfield, N. C. Operations began June 13 in the 216,000-sq.-ft. facility.

Hanes Hosiery Mills Co., New York, N. Y., is producing Supp-hose stockings at its Winston-Salem, N. C., plant under license from Kayser-Roth Corp. Hanes is the first U. S. licensee for the process.

Janesville Cotton Mills, Janesville, Wis., has been sold to the Seton Corp., a California holding firm, for $4.5-million.

A. & M. Karagheusian, Inc., Freehold, N. J., has built a 22,000-sq.-ft. addition to its Albany, Ga., plant. The addition will provide added warehouse and production space. The new structure was completed in October.

Mackintosh Spinning Mill, Inc., Clover, S. C., has completed $450,000 expansion program. Completion date: October. The addition adds 7,000 square feet of floor space and 2,000 spindles, which provides a total of 30,000 square feet and 6,500 spindles.

J. B. Martin Co., New York, N. Y., will build a two-story building containing 30,000 square feet of floor space. The expansion is expected to double the velvet-weaving capacity of the plant.

Reeves Brothers Inc., New York, N. Y., has been licensed by the Veriset Association to sell and promote a new group of fabrics containing various percentages of Verel modacrylic fiber.

Shelby Mills, Inc., Shelby, N. C., has announced that it will join with its New York selling agent, Iselin-Jefferson Co., in the production and distribution of fiber-glass yarn and decorative fabrics. Production is expected to begin in April, 1961. Plans have also been completed to build additional manufacturing space to house a modern Coronizing unit for fiber-glass yarn. Additions and alterations to warping, slashing, and weaving equipment are in progress to adapt them to the manufacture of fiber-glass fabrics.

Spartan Mills, Spartanburg, S. C., has installed 66 Draper X-P 54-in. looms at Beaumont Mills. Forty sets of metallic card clothing have been installed and plans call for gradually equipping all of Beaumont's 301 cards in the same manner. Startex Mills, another Spartan plant, has announced that 168 looms in the print-weaving department have been modified from 40- to 50-ins. wide.

Springs Cotton Mills, Lancaster, S. C. has begun a $7.5-million expansion program. This project will increase the production of sheets and pillow cases.

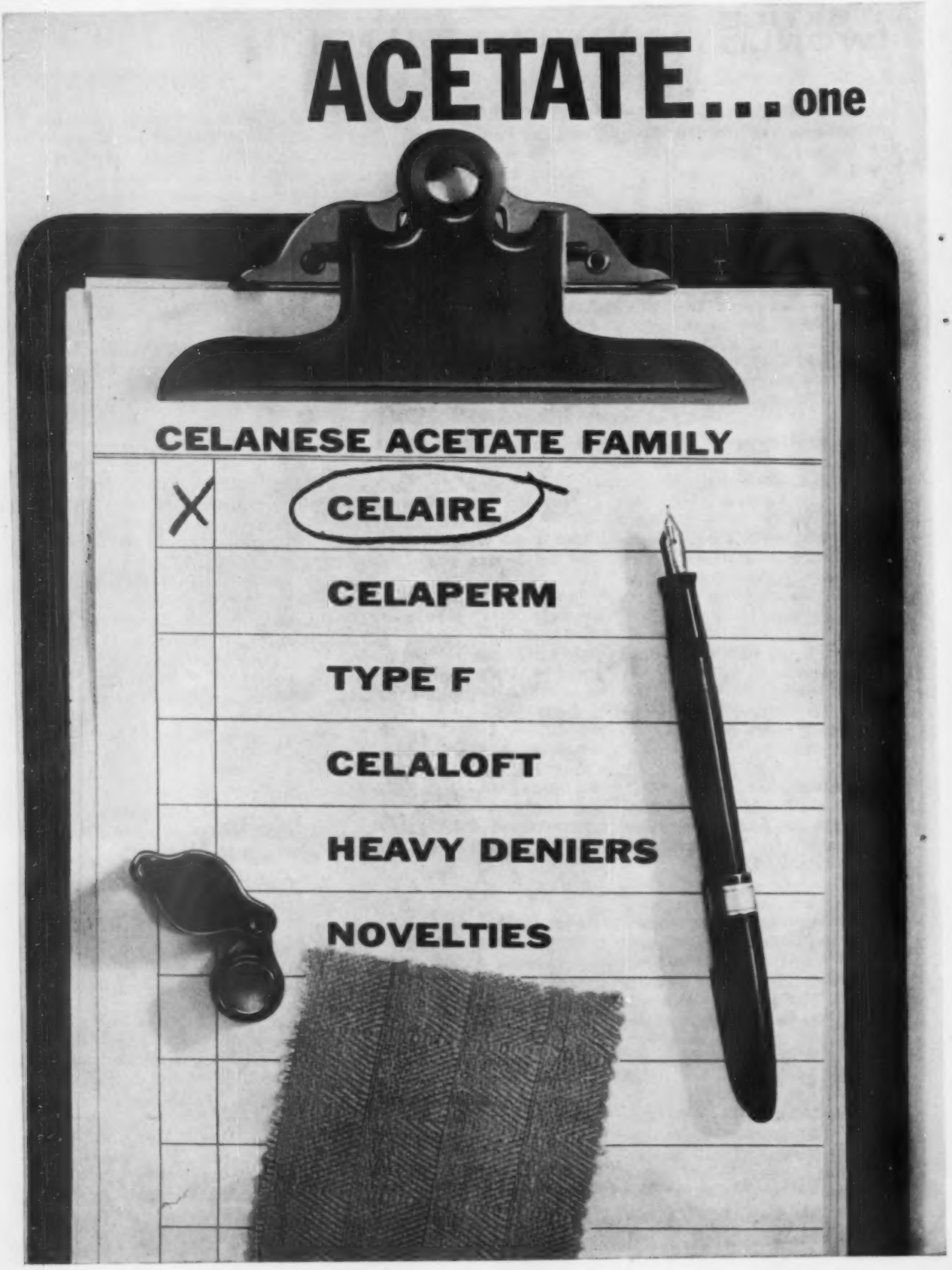
Stonecutter Mills Corp., Spindale, N. C., is constructing a $2-million, 80,000-sq.-ft. addition to house 400 looms and auxiliary equipment.

Henry F. Thomas Inc., Forest City, N. C., has been purchased by Designer Yarns Inc., manufacturers of novelty twisted yarns.

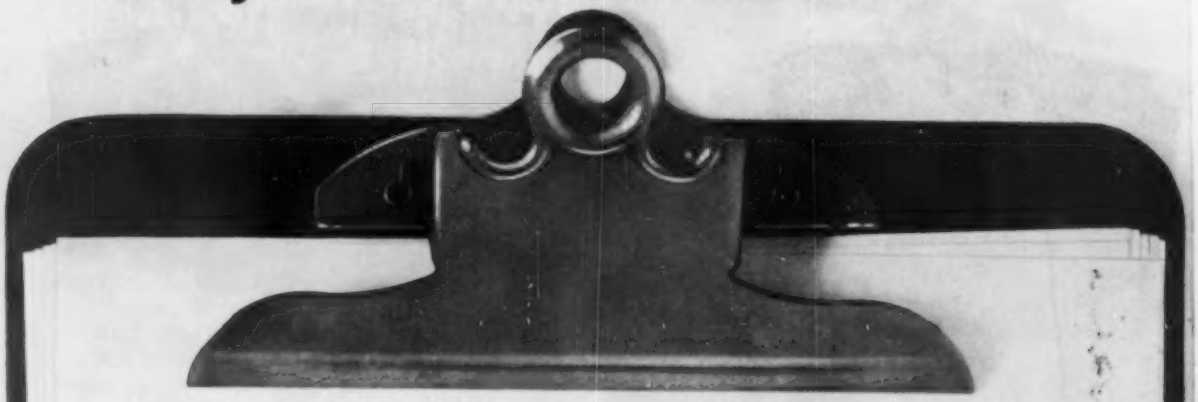
Tuscarora Cotton Mills, Mt. Pleasant, N. C., has bought the stock of Oakboro Cotton Mills Co., Oakboro, N. C. Tuscarora Cotton Mills has 9,072 spindles; produces 22s to 40s cotton yarns for knitting and weaving.

United Merchants & Manufacturers, Inc., New York, has bought British Silk Dyeing Co., Balloch, Scotland.

United States Rubber Co., New York, N. Y., has announced that its affiliate, Lastex Yarn & Lactron Thread Ltd., Leicester, England, will manufacture man-made elastomers for corsetry, swimwear, and lingerie.


ACETATE... one
CELANESE ACETATE FAMILY
X
CELAIRE
CELAPERM
TYPE F
CELALOFT
HEAVY DENIERS
NOVELTIES

# of today's most versatile fibers



CELAIRE, like other members of the Celanese acetate family, has been engineered for particular end uses. Celaire acetate staple blended with nylon is highly desirable for upholstery, slipcover and drapery fabrics. The high quality of these fabrics is assured by the Celanese quality control program for licensed manufacturers. Under this protective program, the Celaire name may be used only on fabrics which have been tested by Celanese for colorfastness, construction, strength and durability.

Particularly notable are the luxury look and glowing colors in fabrics with Celaire. If you are not familiar with this outstanding acetate, contact us now. Celanese Fibers Company, Box 1414, Charlotte 1, N. C.

Celanese® Celaire® Celaloft® Celaperm® Type F T.M.

Celanese Fibers Company is a division of Celanese Corporation of America.

Acetate...a *Celanese* contemporary fiber

DISTRICT SALES OFFICES: 180 Madison Avenue, New York 16, N. Y.; 15 N. Broadway, Des Plaines, Ill.; Western Merchandise Mart, Room 478, San Francisco, Calif.; P. O. Box 1414, Charlotte 1, N.C.; 200 Boylston St., Chestnut Hill 67, Mass.; 3130 Maple Drive, N.E., Atlanta 5, Ga.

EXPORT SALES: Amcel Co., Inc., and Pan Amcel Co., Inc., 180 Madison Ave., New York 16.

IN CANADA: Chemcell Fibers Limited, 1600 Dorchester Street West, Montreal, Quebec.

SACM

SACM-PERL
combs everything

worsteds
synthetics
wastes
blends-etc.

The PERL Rectilinear Comb has proven in production that it will comb wool at high speeds without a burr-knife, and give more production with an equal or higher quality than any other French type Comb in production.

The exceptional versatility of the PERL Comb was illustrated at recent exhibitions where visitors were impressed to see simultaneous combing of nylon waste and wool while BLENDING right on the Comb. Four types of creels are available; a new can creel gives positive and accurate control of the feeding slivers and blends them into an even web for presentation to the nipper, a new lap feeding device contributes towards economies in labor, a standard model can creel and a standard model bobbin creel.

A unique engineering feature, providing *quick adjustment of web tension* at delivery without stopping the machine, greatly reduces work and down time. The machine is designed for easy application of automatic continuous noil removal if desired. Minimum floor space requirements, extra large can delivery (up to 24″ dia.) provide lower production costs.

No one makes a French Comb like the French and you will find no substitute for the advanced engineering, experience and quality incorporated in the PERL Comb. SACM has more than 10,000 rectilinear combs in operation in the world!

Ask to see a demonstration and production figures of the PERL Comb. You will be surprised at the low cost of French Combing made possible by this new equipment.

Société Alsacienne de Constructions Mécaniques
Mulhouse, France

IN THE U.S.A. SALES & SERVICE FOR THE COMPLETE LINE OF SACM WORSTED MACHINERY ARE PROVIDED BY

ATKINSON, HASERICK & CO., INC.

Framingham, Mass.; Pawtucket, R.I.; Greenville, S.C. & Philadelphia, Pa.

What's New This Month in . . .

Fibers, Yarns, and Fabrics

By CAROL WILHELM, Copy Editor, TEXTILE WORLD

Blanket Gets Bonded

Beacon Mfg. Co. has introduced a new blanket of 100% Orlon. The blanket is called Fiber-Sealed. The result: An Orlon blanket that shows good performance after laundering—no shrinkage, no pilling, and no loss in bulk.

The fiber-sealing process — a unique process of bonding—is new. It is the result of joint efforts of Du Pont and Beacon. Du Pont has applied for a patent on the process. Other mills will be joining Beacon as licensees.

Beacon's introductory line of fiber-sealed blankets of Orlon is offered in eight colors and white, and in four sizes. Retail prices start at $9.95 for the twin size.

More at Mooresville

Mooresville Mills has introduced new wash-and-wear fabrics for spring. The company calls the line Crackerjack.

The fabrics, 100% combed cotton, are treated with Scotchgard stain-and-rain repeller. In 6-oz. weight, they come in 15 colors.

How Wool Shifts

Production of men's- and boy's-wear woven-woolen fabrics fell 9% during the first half of 1960 from the corresponding 1959 volume, according to a report from The Wool Bureau, which was issued last month.

There was a noticeable shift in this production from worsteds to woolens in all weight ranges up to 13 ounces and a reverse shift from woolens to worsteds in 13-oz. to 20-oz. fabrics.

Looking at the report again, we see a rise of 3% in women's- and children's-wear yardage for the first half of this year, compared to the same period of a year ago. Woolen constructions continue to account for 92% of total production of women's and children's yardage. There is a marked shift towards the very light weights in the worsted group.

Colors Coordinated

For the first time in the company's history, M. Lowenstein & Sons, Inc., is offering complete color coordination in variety fabrics throughout its entire spring and summer collection —plains and prints in cottons, knitwear, blends, and man-made-fiber fabrics The collection of popular-priced fashion fabrics features the international flavor.

Rich colorings and fine-art designs inspired and culled from all over the world are the keynotes of the collection. Colors are clear and bright. Warm yellows—from chamois to lemon candy—and golden oranges and corals lead on the color sprectrum. Blues — ranging from aqua to Aegean blue to bright Chanel blue—are in abundance. Brown is more important than ever and is seen in many shades. Lilac continues in popularity.

Fabrics have silkier hands and soft, satiny finishes. Surah weaves are important. Cotton duck is shown in a group of colorful prints.

Designs feature large, spaced florals. Big patterns blend together in bold color combinations. Checks of all sizes are shown—many with overprints. Damasks, brocades, and tapestry-type prints continue in their fashion popularity.

News in Fiberglas

What's new in Fiberglas? Sheer gossamers. Flocked designs. Printed plaids and stripes. Clear, vibrant colors.

S. M. Hexter uses a sheer gossamer fabric with a large-scale snowflake design in shades of cool-yellow-greens. It's called Nikko.

Scalamandré shows the Marie Antoinette design for drapery and wall covering taken from an historic wallpaper of the same name. In the wallcovering, the design was flocked in Fiberglas on the Fiberglas fabric and then the fabric was laminated on paper to prevent bleeding.

Ben Rose shows a new concept in Fiberglas—called Salem. It is a red-and-orange printed plaid on a white ground.

Clear cold blue, olive greens, vibrant pinks, sharp oranges, and warm reds are used throughout the Fiberglas collections.

Best Foot Forward

Princeton Mills has developed a new 100%-nylon suede fabric called Purr-Suede.

Initial use of the new lightweight fabric for fall back-to-school shoes in teenage and women's sizes showed that the fabric is washable and cleanable.

Spring will see the new fabric in men's and boy's casual shoes.

Princeton plans a broad introductory advertising campaign of the new fabric.

Drama for Sewing

Wamsutta has opened its dramatic new over-the-counter line for spring and summer. What are the highlights? Designs from all over the world. A wide range of colors. Varied textures.

Designs range from Indonesian batiks, to medieval tapestries, Early American and Federal influences. Persian bamboo prints and delicate Victorian objets d'art are also shown.

Florals are reminiscent of the 18th-century French toiles and upholstery fabrics, through striped and squared Victorian wallpaper effects, to the older styling of flowers, char-

acterized by batiks and Tahitian color-resist prints.

Colors range from hot tropical pinks, purples, neon green, and oranges to soft pastels—both creamy and water-color shades. Grounds are often toned or ivory, as well as shocking white. Color coordination is stressed—with many plain fabrics completely coordinated to prints.

Texture is important in base cloths—in plain and printed fabrics. For exclusive distribution to fabric distributors, the mill is showing Wampoise—a 100% combed cotton super broadcloth with Suttamatic wash-and-wear finish, which will emerge in prints for the first time this spring. The collection shows many designs—from petite wallpaper flowers and stripes, to Liberty-look prints, to squared Medieval conversationals, and to splashy batik-influenced designs.

Cover With Creslan

Pepperell Mfg. Co. introduced last month the Lady Pepperell Classic, a blanket of 100% Creslan, in a selected group of cities.

The blanket, 72x90, is offered in six solid colors: carnation pink, periwinkle blue, green mist, beige, lilac, and white. A winter-weight blanket, it has a 7-in. nylon binding. Retail price, in states east of the Rockies, is $13.95.

Nonresin Finish

Courtaulds (Alabama), Inc., is now offering (under license) a new permanent, nonresin, wash-wear finish to mills called Prestwick.

So far, the finish has been commercially applied to spun rayons only. But, according to Courtaulds, extensive trials suggest that it will be equally effective on cotton, continuous-filament rayon, and other cellulosics, as well as on blends of cellulosic fibers with thermoplastics.

Prestwick has dimensional stability on rayon and cotton fabrics. Treated fabrics show residual shrinkage of less than 1%.

United Merchants & Manufacturers, Inc., the first licensee of the new finish, has been in commercial production since May and has processed over 1-million yards of this treated spun-rayon fabric. UM&M, along with a number of other finishers, is now working—on a trial basis—with a wide range of rayon and cotton fabrics used in apparel and home furnishings.

All for Fashion

Cranston Print Works started the ball rolling on a new printed-fabric promotion — promoting American fabrics for high-style fashion for resort wear, 1961. Supima, British Overseas Airways Corp. (BOAC), and Westport Fabrics are aiding Cranston in the promotion.

The fashion theme: "A World of Fashion Jets to Your Doorsteps." The result: a promotion that spans the textile industry from the cotton boll to the bare-backed cocktail dress in the retail store.

Harvey Seltzer, Westport Fabrics designer, jetted around the world via BOAC and culled designs. Then the designs were translated on Supima cotton.

The fabrics used: Everfast sateens, sheers from Baltic Mills, and 2-ply broadcloths from J. P. Stevens. There are 19 designs in the group.

Leading fashion designers are also participating in the promotion: Adele Simpson, Kaspar of Arnold & Fox, Evan Picone, to name a few. The promotion has also reached the retail level. Lord & Taylor will feature the theme in its New York and its out-of-town stores. Other stores are joining Lord & Taylor in its program.

Wrap-Around Warmth

Troy Blanket Mills is featuring a new line of stadium robes of 100% Acrilan for the 1960 football season. A promotion program is underway with the cooperation of the National Football League.

The robe is offered in authentic team colors and carries the official team emblem. It is packaged in a silver-gray vinyl with a see-through plastic front. The package has a built-in, foam-rubber cushion, which makes a stadium seat.

Light and Lissome

A new featherweight version of a satinette 100%-nylon tricot is now available from J. P. Stevens. It is called Lissome.

Made of Du Pont 20-den., multifilament-nylon yarn, the new fabric has good drape and a rich sheen. It is offered in the company's new spring colors—Stevens Fashion Designer Colors. End use: gowns and panties.

M-J's New Five

Morgan-Jones has added five new bedspread styles to its spring and summer lines.

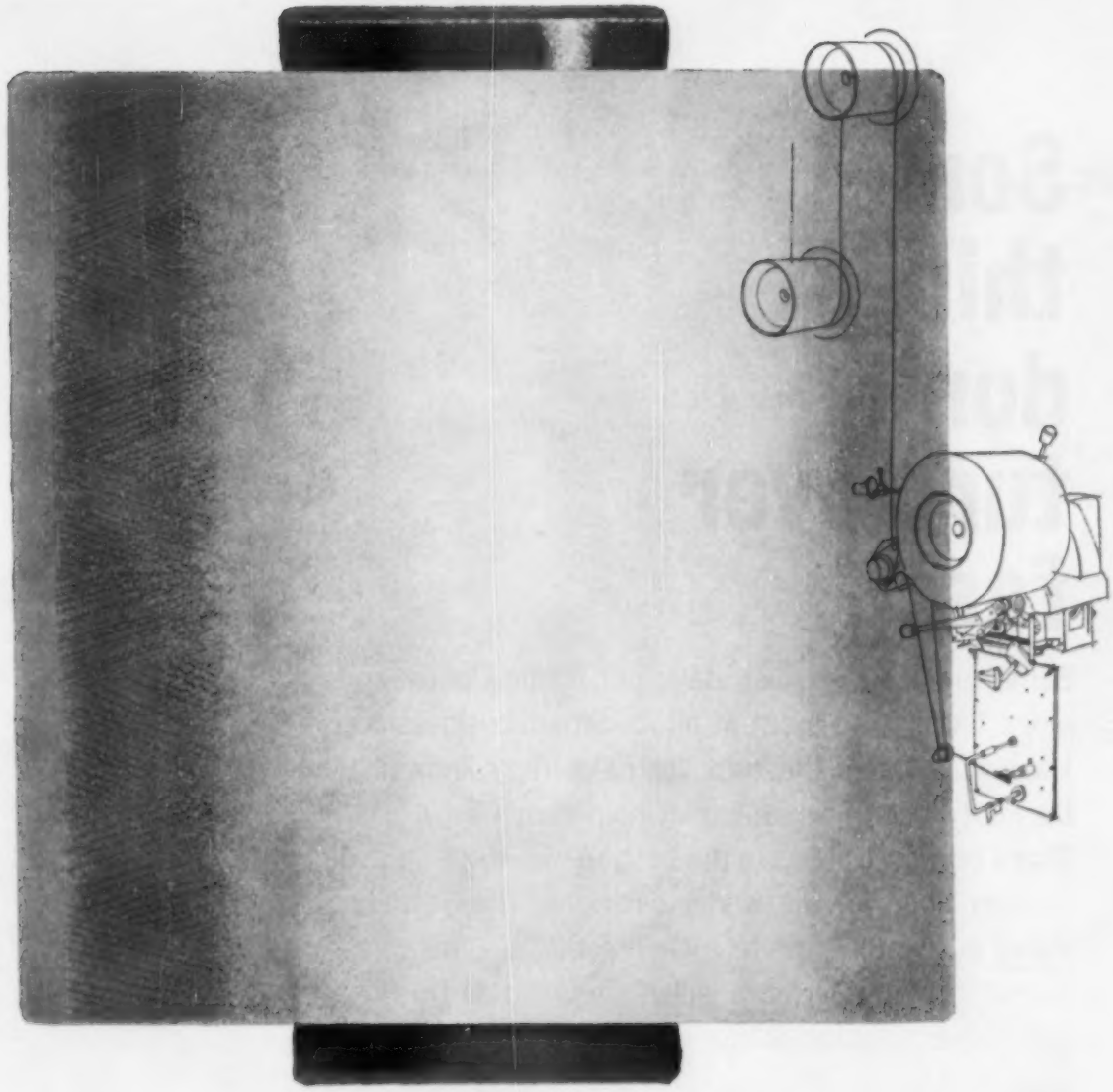
Williamsburg, the first of the five, features a delicately wrought-screen printed design with a documentary flavor on a snow-white shantung-textured fabric. The spread has round corners and is accented with a moss fringe that has a color-accented band in the medium hue of the print. It is offered in blue, rose, lilac, and brown. It retails at $18.98, for either the single or double size. Drapes, to match the middle hue of the spread, are offered at $14.98.

Forum, a contemporary pattern, is loop-woven with a deep dimensional textured effect. It is fashioned with a mitered motif and has square corners, accenting the mitered effect. The spread is trimmed with a full moss fringe. It is offered in 12 shades and retails for $14.98.

Cobblestone looks like matelassé. The deep sculptured quilted pattern is tailored with matching double welting framing the mattress and the hem. It retails for $12.98.

Pinehurst creates an all-over subtle chain-stitch effect. Rounded corners frame it and it has a trim shag border. It sells for $7.98.

Frosty Tempo is seen in frosty candy-colored pastel shades. They are accented with Mylar silver. Loop-woven, the bedspread is trimmed with rich moss fringe. It retails for $14.98.



Investigate the **superior quality** of filament yarn produced with the **Leesona 959 Take-up Machine.** Electronic control maintains accurate constant yarn tension from spinning, drawing, extruding or treating...builds optimum density **precision wound** packages . . . the industry standard. Write **Leesona Corporation,** P. O. Box 1605, Providence 1, Rhode Island.

23T 9.3

LEESONA

CIRCLE 127 ON READER SERVICE CARD

Some things don't turn over fast...

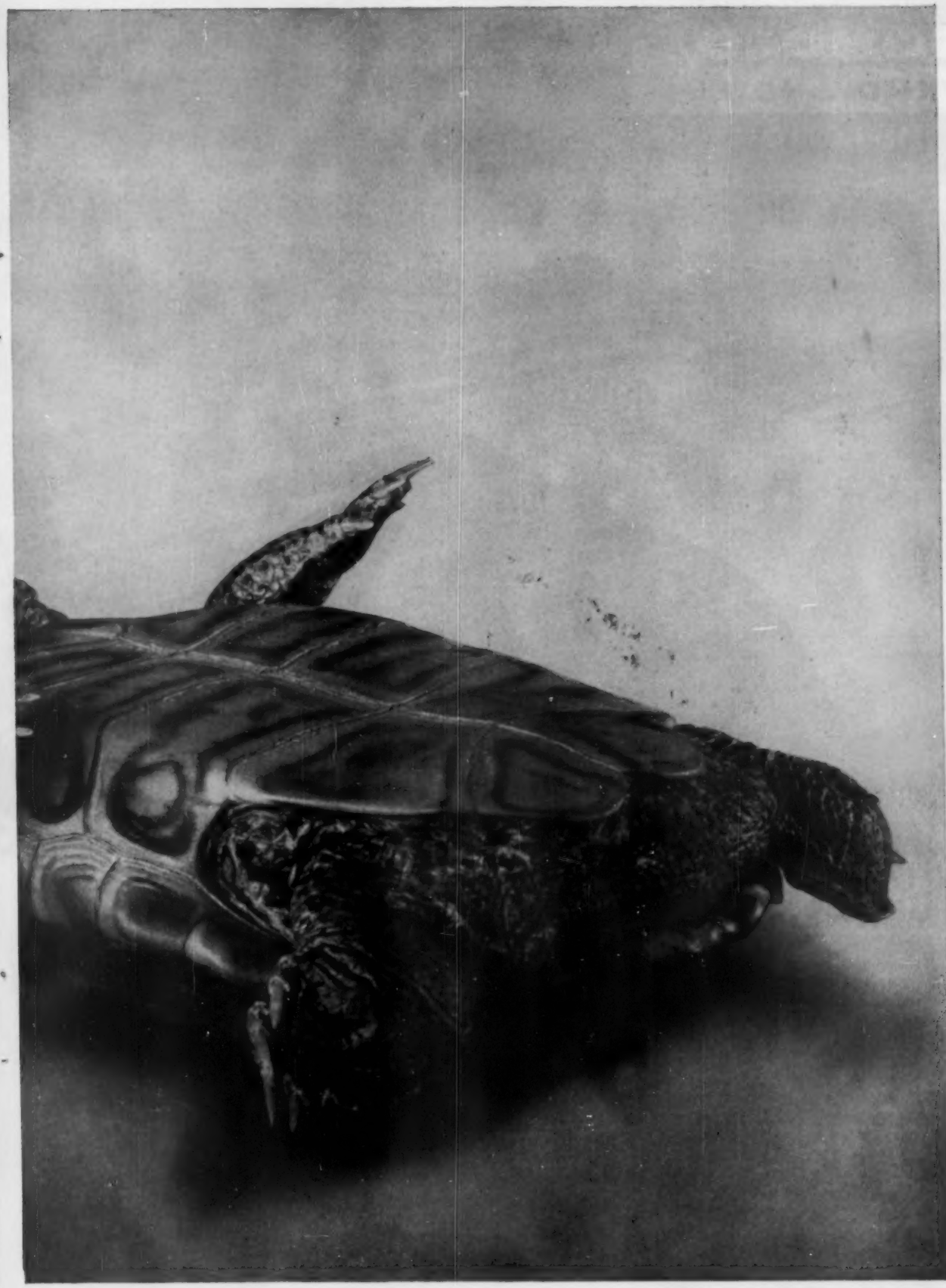
Some merchandise just stays put, getting older and older. Earning no profit at all . . . Smart businessmen know how to cut the turnover risks. They know that Du Pont fiber trademarks can help goods move fast. That's because these are the best-known, most-trusted modern fibers in the world, bar none. They're miles ahead in consumer preference. (Fact: 2 to 1, men in a recent survey preferred a jacket identified as Du Pont nylon over a jacket of the same brand identified as nylon.)...And a hard-hitting, far-reaching advertising program, including "THE DU PONT SHOW WITH JUNE ALLYSON", keeps building this preference...That's why it pays to feature Du Pont fibers in your ads, on your labels and in your selling plans.

DU PONT
NYLON "ORLON"®* "DACRON"®
ACRYLIC FIBER POLYESTER FIBER
...GIVE YOU A SELLING EDGE!

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

*Du Pont's registered trademark for its acrylic fiber. **Du Pont's registered trademark for its polyester fiber.

Enjoy THE DU PONT SHOW WITH JUNE ALLYSON, Thursday nights on CBS-TV.



Sonoco convolute tube production.

Get top efficiency with Sonoco convolute tubes!

To produce yarn tubes or cloth cores which assure trouble-free operations, experience is a "must"—*and Sonoco has it*—plus the proper raw materials and equipment. What's more, Sonoco tubes are designed and manufactured to meet the customer's most exacting requirements.

Because of the superior characteristics, sometimes a Sonoco precision-made tube may cost more than an ordinary paper tube. In the long run, however, use of the Sonoco tube will result in production economics that can far exceed any small initial price differential.

Sonoco convolute tubes are typical of the dependable products manufactured by a fully integrated company with 60 years' experience in creating and producing all types of paper textile carriers. *Only Sonoco,* in its field, provides the necessary knowledge, skill and capacities to meet the ever-changing techniques of the textile industry. *Let Sonoco experience help you!*

SONOCO
Products for Textiles

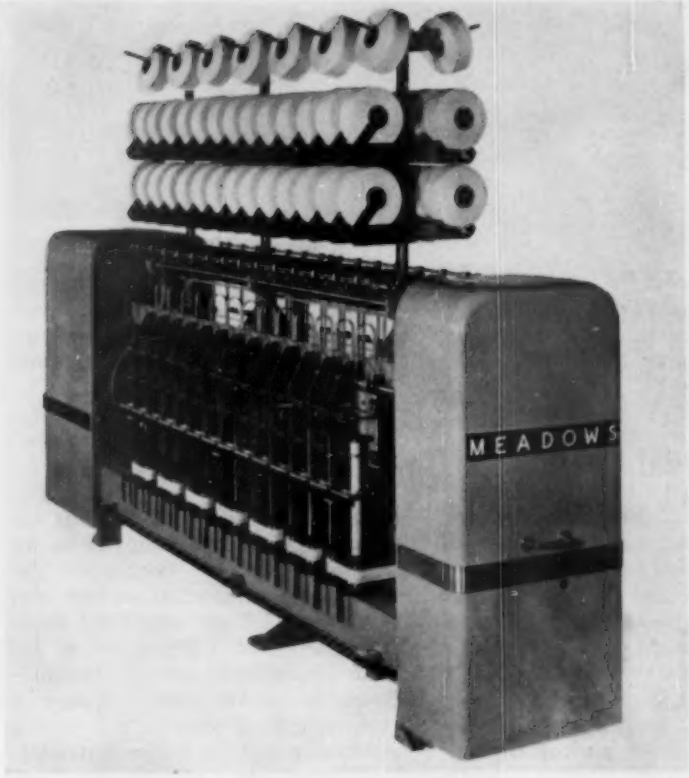
SONOCO PRODUCTS COMPANY, HARTSVILLE, SOUTH CAROLINA • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Holyoke, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Calif. • Fremont, Calif. • Atlanta, Ga. • Richmond, Va. • Brantford, Ontario • Granby, Quebec • Mexico City

CIRCLE 130 ON READER SERVICE CARD

1294

TEXTILE WORLD . . . Equipment and Supply News

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.



Fifteen-Inch Bobbins —Three Pounds of Yarn

This 25-in.-wide twister handles 15-in. long bobbins. The twister, designated model N, was designed by Meadows Mfg. Co. It is a 5½-in.-gage machine with 4-in. diameter rings. The large package is obtained by increasing the bobbin length to 15 inches rather than increasing the ring diameter. In this manner a high spindle speed is maintained (7500 rpm. on 17/2 ply cotton). Head end of this unit is completely ball bearing—including vertical lay shafts and cam shafts. Unit can be converted from Z to S twist by simply swinging one gear.

The thread guide and balloon-control rings traverse as a unit with the ring rail. This maintains a constant yarn balloon and yarn tension. The frame is equipped with ball bearing wherever possible including bottom rolls, drive pulleys, spindles, and idlers.

The unit is also available in a 3-in. gage and various types of creels. As shown above, it is equipped with a new hinge-type creel for cheeses. The swing action provides for ease of creeling and maximum utilization of space. **(Circle E-1 on Reader-Service Card)**

E-2—Overhead cleaner now has a self-contained lint-collection chamber. This unit, called TravelVac, picks up lint from the floor by suction. It runs on tracks over the machines above head height. Centrifugal air currents within the collection box keeps Teflon-coated screens clean. In addition, compressed air jets blow off these screens from the outside once every trip of the traveling unit. The lint chamber holds over three bushels. The unit is easily unloaded by stopping the machine and releasing a hinged bottom door, which allow the lint to fall into a portable container. This traveling unit can also be converted to an automatic disposal type at any future date. Parks-Cramer Co.

E-3—Card feeders are improved to obtain a more uniform delivery of fiber. The Bramwell type G-2 is for short and medium staple and type G-3 is for very long fiber. Spike apron has a self-regulating variable-speed drive. As the stock supply is reduced the apron automatically speeds up. This maintains a constant delivery rate from the beginning to end of each lot.

Shut-down for speed adjustments are nonexistent as the optimum basic spike apron speed can be set while the feeder is operating. The stripping device is a rotary six-wing beater. For extra-long staple a reciprocating curved board is available to replace the beater. Push-board and paddleboard over the delivery apron are set parallel with the diagonal scale pan. Therefore the dumpings are presented to the feed rolls at an angle that eliminates the hill-and-valley delivery to the card. Oil-impregnated and frictionless bearings are used throughout the unit which reduces maintenance. George S. Harwood & Sons, Inc.

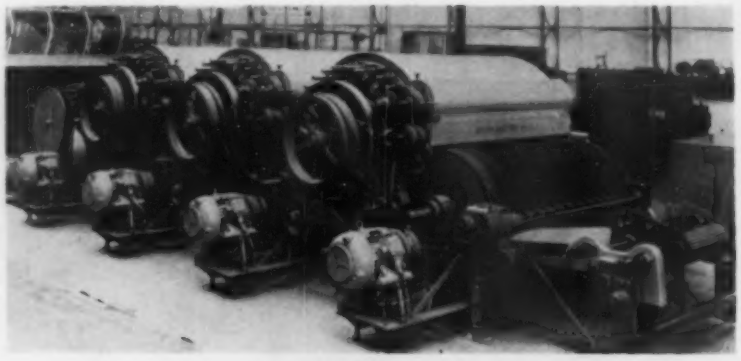
. . . Turn the page

Equipment and Supply News

. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

Individual Drives Power Three-Drum Garnett



The working width of this three-drum garnett, designed by Sacfem, is 60 inches. The individual motors have V-belt drives. The garnett drums, doffers, and all other rolls are equipped with ball or roller bearings. The feed table adjusts to four speeds. The lickerin has a clutch drive and is equipped with an automatic stop motion.

Each of the garnett groups are protected by sheet-metal covers, which can be easily removed. The breast-rolls and garnett drums are also protected by adjustable guides. The machine base is so designed that any of the garnett groups can be removed to permit operation with fewer groups if this is desired.

The unit, model 2328, is available in one to five garnett groups. **(Circle E-4 on Reader-Service Card)**

Special Feed Rolls Twist Novelty Yarns

This 20-spindle twister is equipped with special feed-roll attachments for making novelty yarns. Unit, called Duplex, has been designed by Fletcher Industries. It is adaptable to all fibers. Twister has 5-in. rings and up to a 10-in. traverse and is capable of producing 2½-lb. bobbins on filament and 1½-lb. bobbins on spun yarn.

The traverse action is adjustable. It can produce bottle bobbins (as shown), double-tapered pirns, or straight-traverse bobbins. The frame is constructed of cast iron and steel. Each spindle has roller bearings and a 2½-in. whorl for maximum belt contact. The full-length balloon separators have a swing-out feature that permits cleaning while the twister is running. **(Circle E-5 on Reader-Service Card)**

Signal Device Counts Ends Down

Magnetic signal instrument automatically detects ends down on metallic ring-traveler frame. Called Adamsignal, (designed by Adams, Inc.) unit is adjustable and activates when a pre-determined number of ends break. Each frame has its own control. But a centralized panel board indicates which frames need attention. Unit reduces patrolling by eliminating delays in finding and correcting breaks.

Unit will operate at any spindle speed. A companion unit eliminates delivery waste. It is set up behind the roll system and when an end breaks, it clamps onto the roving or yarn being delivered, which stops the flow of material. This not only eliminates waste but also prevents the broken strand from contaminating adjacent strands. **(Circle E-6 on Reader-Service Card)**

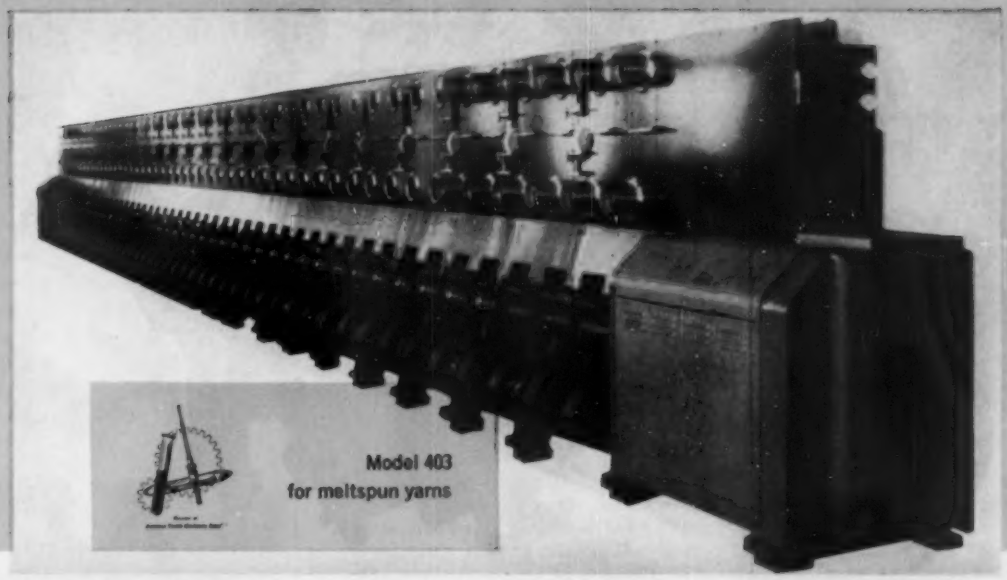
. . . *Turn to page* 135

For Efficient Takeup of Meltspun, Wetspun and Dryspun Yarns

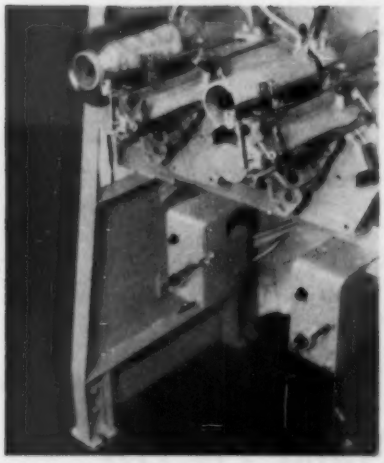
Specify

FOSTER WINDING EQUIPMENT

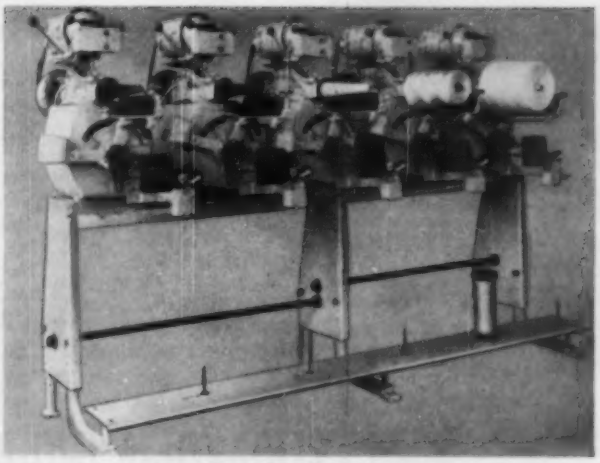
(Used by Leading Producers)



Model 403
for meltspun yarns



Tensiomatic for wetspun or dryspun yarns



Model 78 for wetspun or dryspun yarns

FOSTER MACHINE COMPANY

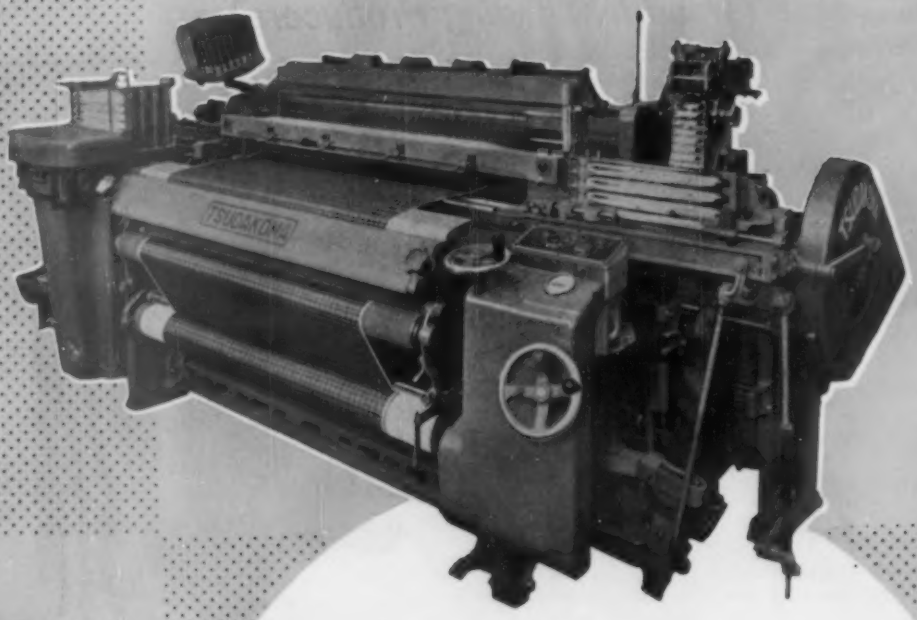
A Yarn Winder for Every Purpose

WESTFIELD, MASSACHUSETTS, U. S. A.

Southern Office — Johnston Building, Charlotte, N.C.
Canadian Representative — Ross Whitehead & Company Ltd., 2015 Mountain St., Montreal, Que. and 180 Dixie Plaza, Port Credit, Ont.
European Representative — Muschamp Textile Machinery (Sales) Ltd., Elder Works, Wellington Road, Ashton-under-Lyne, Lancashire, England

14-0

Tsudakoma



ツダコマ

Automatic Loom and Ordinary Loom
(for Silk, Rayon, Nylon and all Synthetic Yarns)

Dobby

Preparatory Machine

Throwing Machine
High Speed Bobbin Winder
Doubling Machine
High Speed Bottle Winder
High Speed Warping Slasher
High Speed Sectional Warper
High Speed Magazine Creel

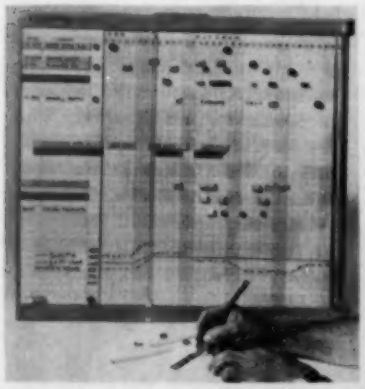
TSUDAKOMA INDUSTRIAL CO., LTD.

Head Office : Kanazawa, Japan
Branch Office : Tokyo · Osaka

Equipment & Supply News

. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

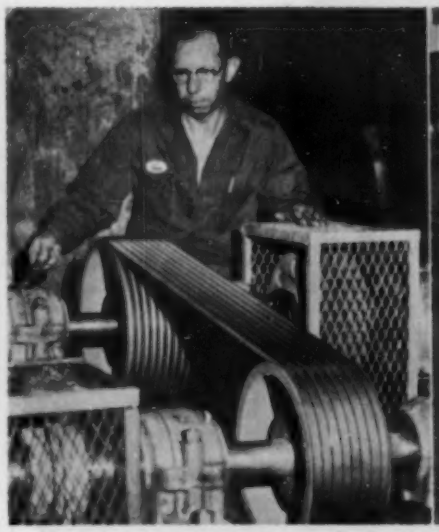


E-7—Visual control board, called Rol-a-chart Magnetic, provides versatility for production scheduling with magnetic indicators. Indicators are available in six colors, with write-on, wipe-off surface. Rol-a chart Div., Conley, Baltzer & Steward

E-8—Fan combines Airfoil centrifugal performance with space-saving straight-line air flow. Designed to utilize small areas, the unit can be hung from the ceiling, wall mounted, or stacked one above the other. It is available in six sizes with Airfoil wheel range from 27 to 44½ inches. Air flow ranges from 4,700 to 46,800 cfm. Unit uses same size inlet and outlet ducks. The motor is mounted on the fan housing or as a separate unit. Both arrangements use V-belt drives for quiet and efficient operation. Westinghouse Electric Corp.

. . . *Turn to page* 136

2 ways Gates high capacity V-Belt Drives contribute to industry profits



ON IN-PLANT EQUIPMENT, Gates Super HC V-Belt Drives lower maintenance costs—as on this pump at Scott Paper Company's Detroit plant. The pump was formerly driven by a special belt, but 6 of these belts failed in about 3 months. In comparison, a Super HC Drive has been operating for the past year with NO down time and NO replacement cost.

ON EQUIPMENT FOR SALE, Super HC High Capacity V-Belts produce savings all down the line—as on these sand pumps being readied for shipment from Denver Equipment Company's plant. With Super HC, sheave dimensions can be reduced 30% to 50%, overall space up to 50%, drive weight by 20%, and drive cost by as much as 20%, compared to previous drives.

A little more than a year ago Gates introduced a new high capacity V-belt—a slimmer, tougher, more flexible V-belt with far greater capacity to transmit horsepower than conventional belts.

Because this revolutionary V-belt permits narrower sheaves, fewer belts, and closer center distances, hundreds of plants across the country have found Gates Super HC V-Belt Drives contribute to profits in 2 ways: through marked savings in drive costs on production machines *within* the plant and on powered equipment manufactured *for sale*.

Gates V-Belt Distributors and Field Engineers are listed in the Yellow Pages in all major industrial centers. Ask your distributor for the handbook, *The Modern Way to Design V-Belt Drives.* TPA 544

The Gates Rubber Company, Denver, Colorado
Gates Rubber of Canada Ltd., Brantford, Ontario

Gates

The Mark of Specialized Research

same hp capacity in smaller "package"

GATES SUPER HC V-BELT DRIVES

CIRCLE 135 ON READER SERVICE CARD

3 years grinding
Unretouched photomicrographs (20x): Ordinary metallic wire is blunt even when brand new. Note the irregularity of teeth and blunt tips, equivalent to at least three years grinding loss.
Booth Metallic Wire. Note absolute uniformity from tooth to tooth . . . long, full point means up to three years extra service life.
with
BOOTH METALLIC Clothing

You Start Three Years Ahead!

The irregular height of ordinary metallic wire requires severe initial grinding to achieve uniformity on the card causing additional blunting of points and reducing the life of the wire. An extra three years is only one of the advantages you get with Booth extra-precision metallic card clothing . . . the others are:

- Greater Production
- Improved Yarn Quality
- Lower Carding Cost
- Virtual Elimination of Stripping and Grinding.

You get these advantages because Booth Metallic is made to chronographic accuracy by Graf of Switzerland renowned the world over for extra-precision card clothing.

- Tolerance ±5/10,000 of an inch
- Pointed Teeth (See illustration above)
- Fully Hardened Point on tough, even-tempered wire-flanks means Tooth Breakage Eliminated
- Easier Installation—precision wire is even and smooth when mounted, leaving no inaccuracies to be ground out.

Gain these benefits . . . put Booth Metallic to work in your mill. Full information from:

BENJAMIN BOOTH COMPANY
ALLEGHENY & JANNEY STS., PHILA. 34, PA.

Booth

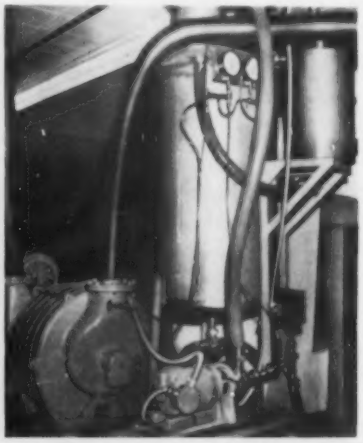
Sales Offices: Charlotte, N.C.—Richard Hurley • Philadelphia, Pa.—Norman F. Bush—REgent 9-8989 Greenville, S.C.—Hurley & Harrison • West Point, Ga.—Charles G. Stover • Lowell, Mass.—William Gill

Equipment & Supply News

. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-9—Clinch stapler, model CT-859-OC, is designed to divert staple legs outward and upward. The staple is driven without the use of a metal plate beneath the tool. The unit can be adjusted to control the amount of staple leg curl. Fastener Corp.



E-10—Chemical-feed system is used for resins, dyestuff, and other chemicals used in the textile industry. Unit is made from stainless-steel and noncorrosive materials. It has a reservoir-mixing tank, circulating pump, full-flow filter, and constant-level feed tank. All valves and piping can be disconnected for cleaning. System recycles fluid to maintain uniform concentration. Curlator Corp.

E-11—Thermometer, model TAB-8, is designed for wall mounting. Its large dial makes for easy reading. Dial has 6½-in. diameter. Unit weighs 1½ pounds. Instrument has a range of —30 to 230 F. Accuracy is within 1% over the full scale. Abrax Instrument Corp.

. . . *Turn to page* 138

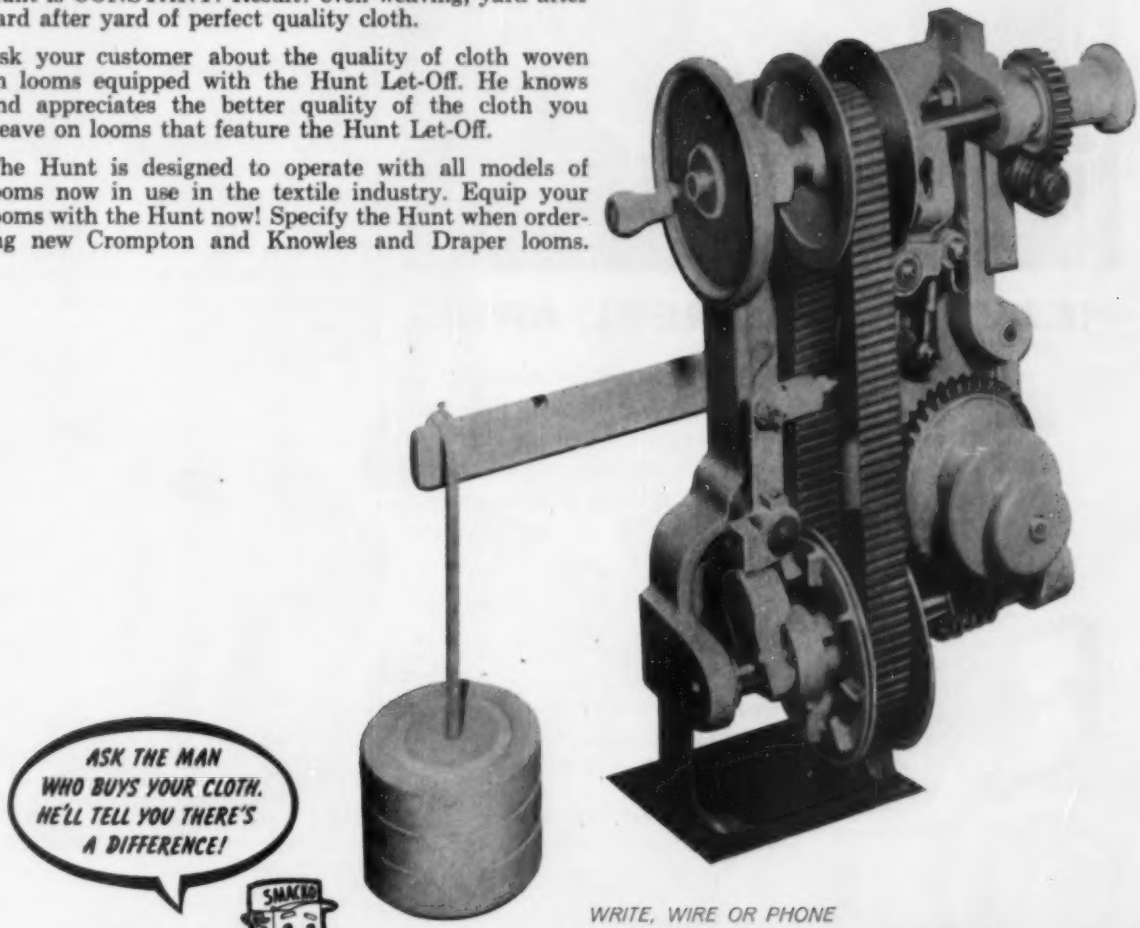
No "Hungry Look" with . . .

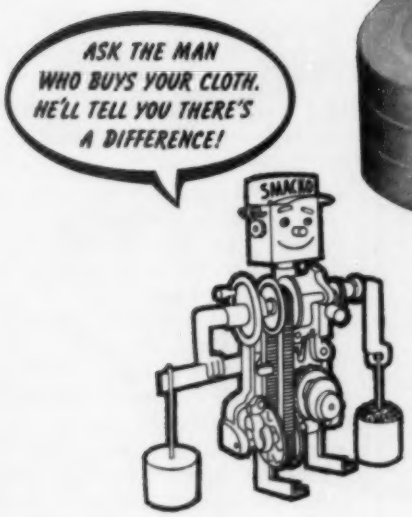
Hunt Let-Off®

No more "hungry look," no more thick and thin places, wavy lines, set marks—in cloth woven on looms equipped with the Hunt Let-Off. The tension maintained by the Hunt is CONSTANT! Result: even weaving, yard after yard after yard of perfect quality cloth.

Ask your customer about the quality of cloth woven on looms equipped with the Hunt Let-Off. He knows and appreciates the better quality of the cloth you weave on looms that feature the Hunt Let-Off.

The Hunt is designed to operate with all models of looms now in use in the textile industry. Equip your looms with the Hunt now! Specify the Hunt when ordering new Crompton and Knowles and Draper looms.





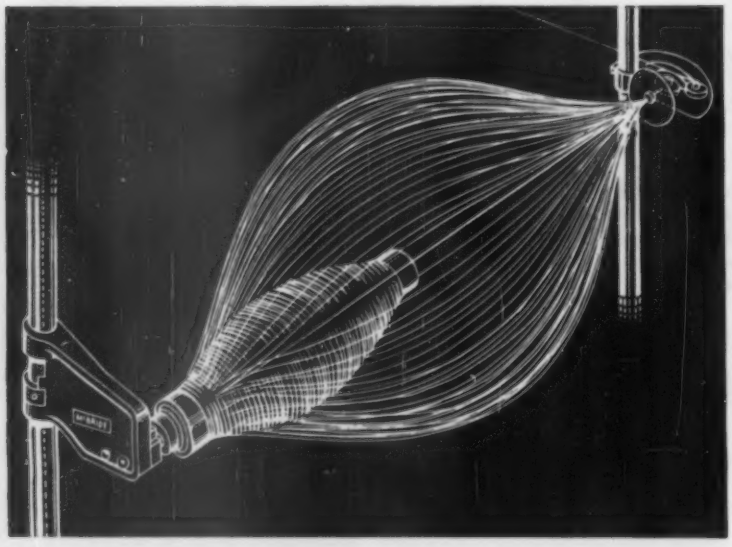
WRITE, WIRE OR PHONE

SOMACO

SOUTHERN MACHINERY COMPANY

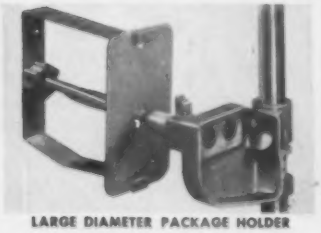
Box 3217-Station A, 5806 Augusta Road, Greenville, S. C., CRestwood 7-2116

BE ON TARGET WITH McBRIDE

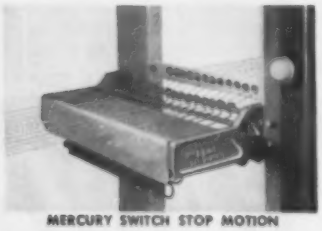


HEAVY DUTY CREEL ARMS

UNIVERSAL CONE HOLDER



LARGE DIAMETER PACKAGE HOLDER



MERCURY SWITCH STOP MOTION

Are your creel arms overloaded? Have you a problem reaching the target (entrance eye) on your tensions? If so you are losing warping efficiency. McBride's heavy duty package arm is designed specifically to correct this situation!

No Sag — even the largest packages stay straight on target for accurate over end draw off.

Fast Change — arm swings back out of way for package change, no interference with ballooning yarn.

McBride swing arm assemblies are made to fit all packages.

Instant changeover with McBride Quik change cone and large diameter package holders.

Complete new creels or fittings to modernize your existing creels.

Write today for our latest catalog.

LET McBRIDE STUDY YOUR WARPING SITUATION. YOU MIGHT BE SURPRISED WITH THE COSTS YOU CAN SAVE, THE IMPROVED QUALITY IN THE WARPS YOU PRODUCE.

CREELS FOR *EVERY PURPOSE*, CONE HOLDERS, STOP MOTIONS, TENSION CONTROLS, WARP BEAMS, FLANGES, CARPET INSPECTION TABLES, METAL AND WOOD ROLLS.

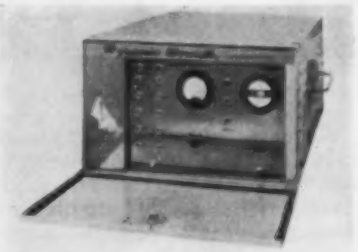
Complete engineering service is part of every McBride installation.

McBRIDE COTTMAN AVE. & WISSINOMING ST.
PHILADELPHIA 35, PENNSYLVANIA
In Canada: Hugh Williams & Co., 27 Wellington St. E. Toronto 1, Ontario

Equipment & Supply News

. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.



E-12—High-frequency sound machine can expel rats from a building in 72 hours. The vibrations are above the range of the human ear or household pets. One unit (20x31½x12 inches) can serve a 120,000-sq.-ft. building using transducers and speakers. It is equipped with a time clock, which permits scheduling broadcasts at night when rodents are most active. Clifford A. Koening, Inc.

E-13—Stereoscope, called Zoom 70, is designed for quality-control work. Working distance remains constant for all magnifications within the range of 0.7x through 3.0x. Control knob permits an infinite number of magnifications within this range. Base is a combination stage and light box. Illumination is by four fluorescent tubes that have a dimming control. One eyepiece contains a focusing adapter. Also available are 10x and 20x eyepieces that are interchangeable. This extends the range from 7x through 60x. Bausch & Lomb, Inc.

. . . *Turn to page* 140

Textured Impressions

Fabrics knitted on the Wildman Jacquard JSD circular knitting machine create lasting impressions in the outerwear line. UNLIMITED pattern range enables fabrics to be knitted that are classics in design and texture.

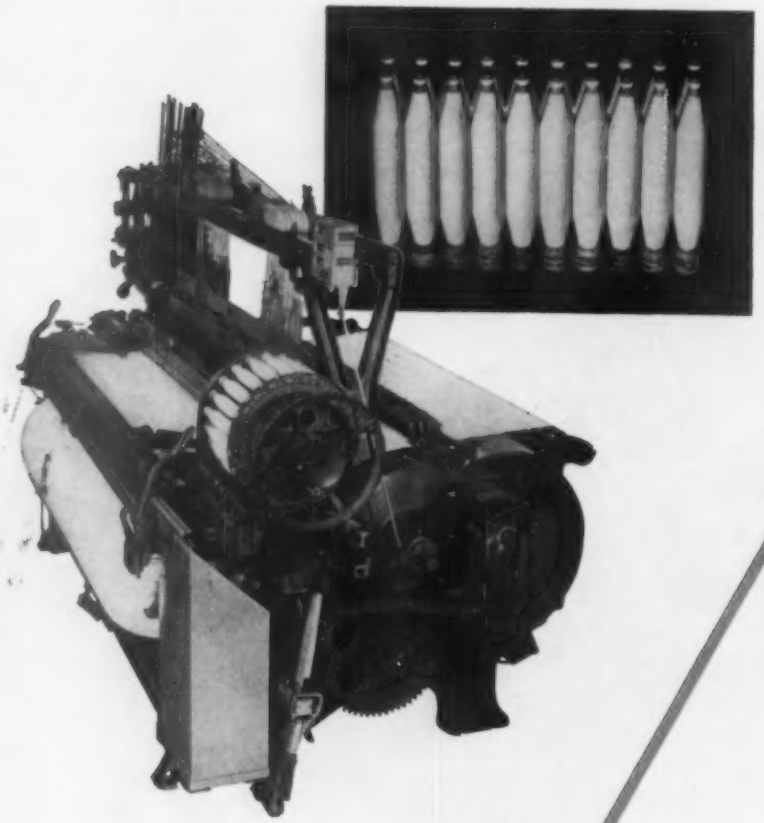
Double piqué . . . Twill Back . . . Blister . . . Rib . . . Tuck . . . Two-Three-Four Color Welt Back Fabrics. Ideal for high production of unique fabrics. Ask for complete details on this new model, the JSD.

WILDMAN JACQUARD

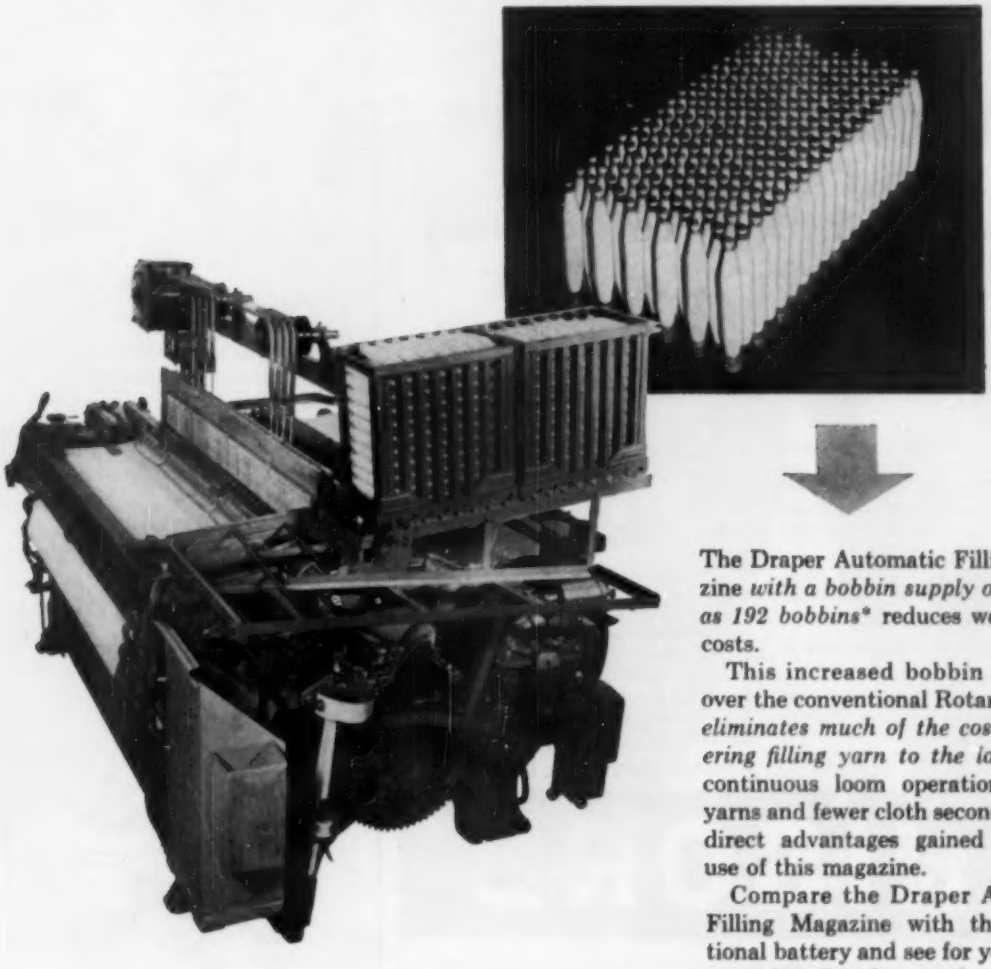
WILDMAN JACQUARD CO. • 1210 Stanbridge St. • Norristown, Penna. • Manufacturers of HEMPHILL BANNER Knitting Machine
A subsidiary of Draper Corporation, Hopedale, Mass.

The only circular knitting machine using a true Jacquard patterning mechanism.

REDUCE FILLING HANDLING...



TO A MINIMUM



The Draper Automatic Filling Magazine *with a bobbin supply of as many as 192 bobbins** reduces weave room costs.

This increased bobbin capacity, over the conventional Rotary Battery *eliminates much of the cost of delivering filling yarn to the loom.* More continuous loom operation, cleaner yarns and fewer cloth seconds are also direct advantages gained from the use of this magazine.

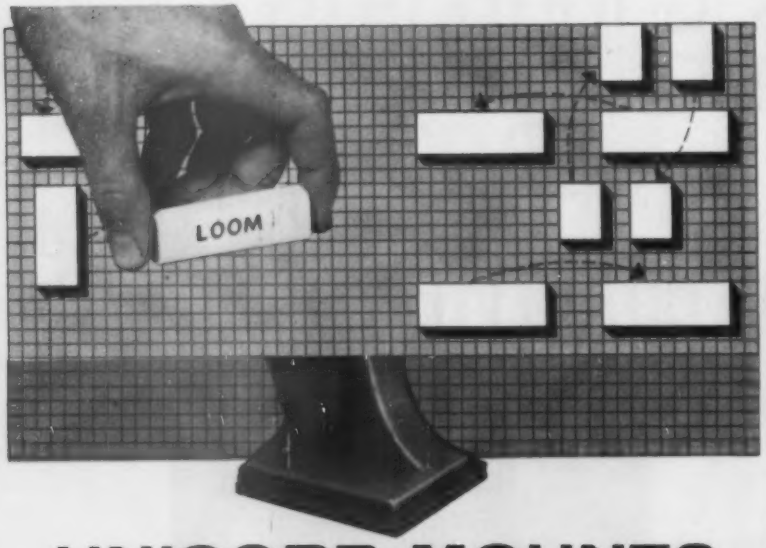
Compare the Draper Automatic Filling Magazine with the conventional battery and see for yourself the many benefits that can be obtained.

For additional information consult your Draper representative.

**1¼" diameter bobbins*

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.



UNISORB MOUNTS

Speed and Simplify Textile Machine Relocation

You can keep your mill operating at top efficiency by easily relocating your machines for maximum cost savings — with a Unisorb Mounting program. It is the one method that gives you complete choice of mount selection and flexibility in machinery location.

Textile mills throughout this country and abroad have depended on this Unisorb system to help them maintain production efficiency for over 25 years. Here is how it can help you . . .

- Unisorb holds machinery in place without screws or lag bolts — no hole drilling, no tricky spotting.
- Up to 80% of installation time is saved.
- Machines can be quickly and easily moved to new and more efficient locations.
- Unisorb reduces transmitted vibration and noise up to 85%.
- Machines can be run at maximum speeds, increasing production.
- Unisorb helps reduce worker fatigue and increase their productivity.
- Unisorb keeps machines level — reduces wear and tear on moving parts.

UNISORB MOUNTS

MAKE THE DIFFERENCE!

Unisorb is available in a wide variety of densities and thicknesses to suit all types of textile machines, including a special type "T" pad for spinning, roving and twisting frames. Ask your local Unisorb distributor for complete information or write direct.

INDUSTRIAL SUPPLY CO., CLINTON, S.C. • TEXTILE SUPPLY CO., DALLAS, TEXAS

UNISORB

UNISORB 213 SOUTH STREET, BOSTON 11, MASSACHUSETTS

Division of The FELTERS Company New York, N.Y. • Chicago, Ill. • Detroit, Mich. • Upper Darby, Penna. • St. Louis, Mo. • Taylor Felt & Supply Co., San Francisco, Calif. • Acorn Mfg. Co., Los Angeles, Calif.

Please send me a Unisorb Sample and Free Book.

Name.....

Company.....

Address.....

City.....Zone.....State.....

FE 9-60

Equipment & Supply News

. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-14—Water brake absorbs shaft horsepower of engines, turbines, and rotating machinery. Seven models are available. Power absorption ranges from 1,000 hp. at 20,000 rpm. to 8,000 hp. at 10,000 rpm. Each unit can be adjusted within its specific range. The brake operates in either direction of rotation. It can be disassembled for complete inspection. Unit can also be used to measure power output. Kahn & Co.

E-15—Folding machine is electrically driven. It automatically feeds, folds, counts (110 sheets per minute), and deposits the folded sheets in a stack. Folds are changed from one type to another by two quick-set controls. When the last sheet is folded the unit stops. Machine handles sheets from 3x5 to 9x17 inches. It is also available in a hand-operated unit for short, occasional runs. Heyer, Inc.

E-16—Metering regulator can be mounted in any position without affecting accuracy of flow. The metering dial shows rate of flow in cubic feet per hour. The unit can be used with oxygen, carbon dioxide, helium, nitrogen, or argon. Harris Calorific Co.

. . . *Turn to page* 144

POWELL
CORROSION-RESISTANT
VALVES

Performance makes the world of difference

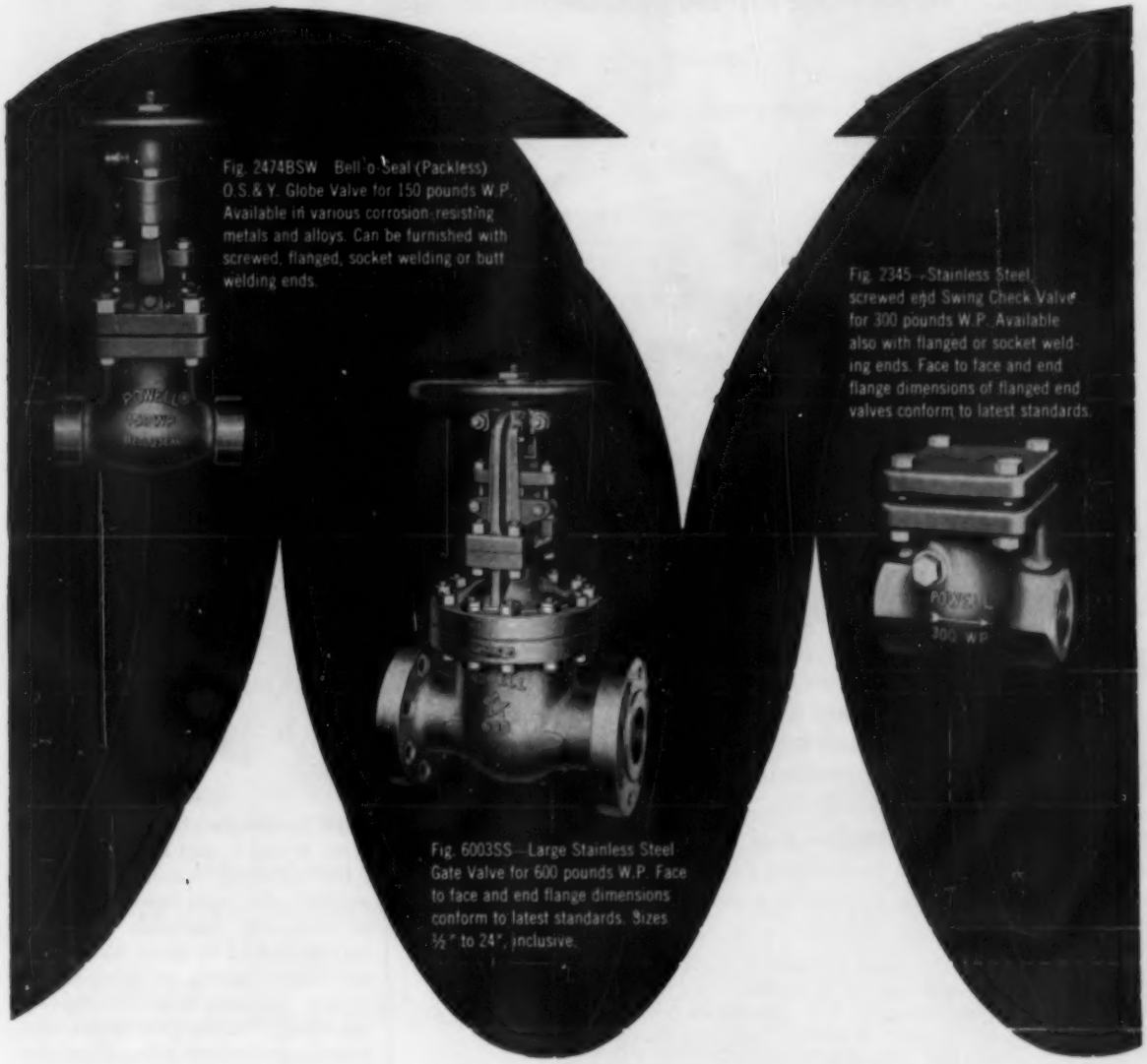


Fig. 2474BSW Bell-o-Seal (Packless) O.S.& Y. Globe Valve for 150 pounds W.P. Available in various corrosion-resisting metals and alloys. Can be furnished with screwed, flanged, socket welding or butt welding ends.

Fig. 6003SS—Large Stainless Steel Gate Valve for 600 pounds W.P. Face to face and end flange dimensions conform to latest standards. Sizes ½" to 24", inclusive.

Fig. 2345—Stainless Steel screwed end Swing Check Valve for 300 pounds W.P. Available also with flanged or socket welding ends. Face to face and end flange dimensions of flanged end valves conform to latest standards.

Powell pure metal and special alloy valves have long been recognized by the Chemical and Process Industries as leaders in the field of corrosion-resistant flow control equipment.

The result of painstaking research; years of experience in modern foundry practice, pattern limitations, and machining possibilities, Powell Corrosion-Resistant valves can be depended upon for long uninterrupted service, with little or no maintenance, and freedom from contamination of end product.

They are available in a wide selection of materials ranging from "A" to "Z" (Aluminum to Zirconium) to handle practically every known corrosive media. For complete details contact your nearby Powell Valve Distributor—or write directly to us.

Powell . . . world's largest family of valves

THE WM. POWELL COMPANY • DEPENDABLE VALVES SINCE 1846 • CINCINNATI 22, OHIO

NEW D & F Model "H" (Lower and Narrower) SPINNING FRAME

. . . lets you choose your own frame specifications for:

Better yarn quality

Controlled, improved spinning

Higher production output

Lower unit costs

DAVIS & FURBER

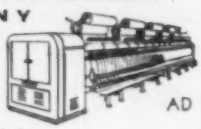
lets you choose the features you need. There are 51 in all. 30 are entirely new.

- ☐ Increased package size
- ☐ Reduced floor space (15% approx.)
- ☐ Variable speed drive
- ☐ Automatic needle injection-type spinning rings
- ☐ Ballooning rings
- ☐ Ring size up to 6"
- ☐ Gauge size up to 7½"

Check the items of interest. Tear out advertisement and mail to us at once. Call us, or simply get in touch with your own Davis & Furber man. Send for new Model H Spinning Frame folder. Find out what "COORDINATED PRODUCTION" can mean to you.

DAVIS & FURBER
MACHINE COMPANY

TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 15-I

Member — American Textile Machinery Association

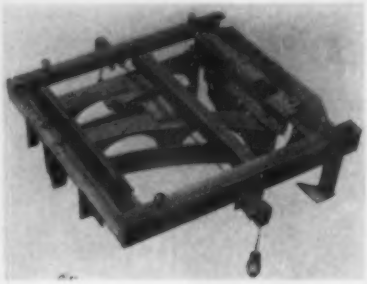
CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

Equipment & Supply News

. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-17—Centrifuge separator is designed for speeds up to 2,000 rpm. The unit has a leakproof, freeze-proof valve that does not require grease. The separator is used for centrifuging of two-phase liquid systems. It has a capacity of 125 ml. Fischer & Porter Co.



E-18 — Overhead-track switches, types K and L, can handle loads of 2,000 to 4,000 pounds. Units are available for right-hand, left-hand, or three-way operation. Switches may be shifted by hand, electric, or air. Safety guards are provided to prevent carriers from running off open ends. The track-carrying frame rides on antifriction rolls. Cleveland Tramrail Div., Cleveland Crane & Engineering Co.

E-19—Harness adjuster is rustproof and easily adjusted for no-slip accurate settings. Three sizes are available: standard with 1- and 2-in. adjustment, and heavy duty with 2-in. adjustment. Each comes with open eye, closed eye, or hooks. Louis P. Batson Co.

. . . *Turn to page* 146

Long Storage TravelVac

Includes:
Overhead lint collecting chambers

Internal screen cleaning air currents

External screen cleaning air jets

Utilizes
simple box for manual doffing of collected lint

Readily convertible
to automatic unloading and disposal

Saves Labor . . . Improves Quality

Send for Bulletins X56 and X96

Parks-Cramer Company

FITCHBURG, MASS. CHARLOTTE, N.C. ATLANTA, GA.

CIRCLE 145 ON READER SERVICE CARD 145

Bondaron, "the leather with the hair on", is the world's best and strongest textile leather.

SKEPTICAL? But don't take our word for it! Send for a free sample of Bondaron leather and apply your own torture tests . . . you'll be convinced. Bondaron won't stretch under exposure to humidity—won't crack under excessive dryness. Bondaron has high tensile strength — great gripping power. It's durable and pliable — with minimum stretch.

Check Bond's complete line of textile loom leathers that have outperformed all comparable products for almost three-fourths of a century. Including:

• Round and flat leather belting • check straps • lug straps • jack straps • loom pickers and other loom accessories.

write for free sample of **BONDARON® LEATHER AND TEST IT YOURSELF.**

NAME..... COMPANY.....

ADDRESS.....

Bond **CHARLES BOND COMPANY**

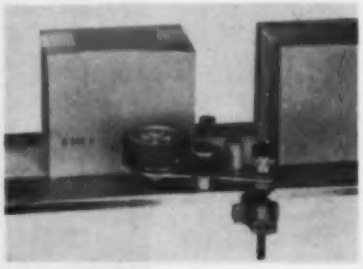
617-23 ARCH STREET • PHILADELPHIA 6, PENNSYLVANIA

Equipment & Supply News

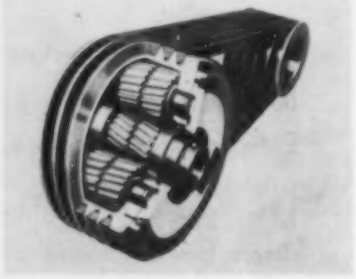
. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-20—Optical scanning device, incorporated in a tabulating card punch, reads handwritten markings and punches cards. Unit reads marking on standard 90-column cards and punches code holes into the same card. It operates at 150 cards per minute. Notations are made with any soft lead pencil. The machine reads numerals and notations such as check marks, lines, X-marks, and circles. Remington Rand



E-21—Roller printer, model 10-P coder, has a Porelon roller. The ink is contained in the roller and 100,000 impressions can be made before re-inking. Porelon adapter sleeves have been developed for converting standard ink rollers. Bell-Mark Corp.

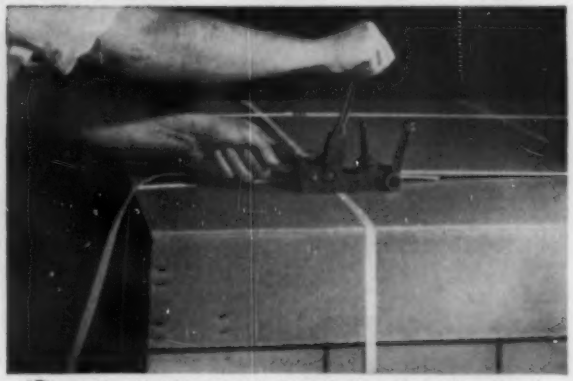


E-22 — Shaft-mounted rotating transmission has reduction ratios up to 270 to 1. Unit is mounted on the machine drive shaft. The outer surface is machined for V-belt drive. On-off control is by mechanical, electrical, or hydraulic means. Unit is available for dual-speed operations. Capacities range from fractional to 60 hp., and torque ratings up to 21,850 pound-feet. Airborne Accessories Corp.

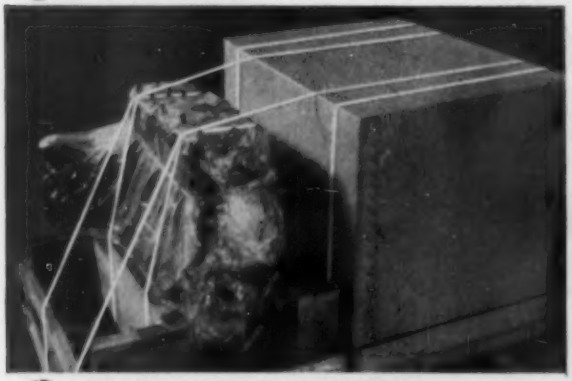
. . . *Turn to page* 148

NEW SAFETY

1 **Radically new.** AVISTRAP cord strapping is made of super-strength Avisco® rayon . . . has no sharp edges, is flexible and easy to handle. Brings new safety—and new savings—to industrial packaging.



2 **Takes the danger out of tensioning.** If over-tensioned, AVISTRAP cord strapping will not break and lash out with jagged ends. Personnel work in complete safety, need no gloves. Safe handling also saves time.



3 **Safer for merchandise.** AVISTRAP holds heavy merchandise securely (4,000-lb. skid shown), will not chafe protective materials, has no tendency to snag handlers' hands. Light weight lowers shipping costs.

4 **More safety for your customers.** AVISTRAP-strapped packages aren't dangerous to open. AVISTRAP won't whip when it's cut. In addition, waste AVISTRAP is compact, easily burned or otherwise disposed of.

AVISTRAP* CORD STRAPPING

Super Strength • Economy • Reduced Damage • Easy Handling • Low Cost Imprinting

AVISTRAP*
CORD STRAPPING

*Trademark of American Viscose Corporation. Patents Pending.

Now available in a range of sizes—along with complete tool and accessory service—from selected paper distributors in all major industrial areas.

Request a demonstration in your plant. District sales offices located:

Atlanta, Ga.	Dallas, Tex.
Boston, Mass.	Denver, Colo.
Charlotte, N. C.	Los Angeles, Calif.
Chicago, Ill.	New Orleans, La.
Columbus, Ohio	New York, N. Y.

AMERICAN VISCOSE CORPORATION, INDUSTRIAL PACKAGING DEPT., 1617 PENNA. BLVD., PHILA. 3, PA.

J. E. CARROLL & CO

PRINT OR BACK DRYERS

A Variety of Types and sizes incorporating the latest features for more drying efficiency. Special units to your specifications. We would be pleased to submit quotations for your consideration.

CYLINDER DRYERS • PADDERS • COOLING CYLINDERS • DYE TANKS

J. E. CARROLL & CO LOWELL, MASSACHUSETTS

CIRCLE 252 ON READER SERVICE CARD

Neat Heat for Revolving Drums

The Rotary Union is trim and compact. It takes only a few minutes to install and needs no adjustments or mechanical maintenance. It permits adjustment of rolls without disconnecting or repiping. The self-adjusting and self-aligning features of the Rotary Union help maintain a perfect seal for months and years without mechanical attention of any kind. Note also the PSC Model 70T Unitrap. This compact, large capacity steam trap has trigger-action condensate discharge which assures a steady flow of hot dry steam.

You can rely on this combination for protection against over or under dried warps and cloth. Write for Bulletins 700 & 800.

*Trade Name—Patented

"WHERE *Good Connections* COUNT"®

PERFECTING SERVICE COMPANY, 332 Atando Ave., Charlotte, N.C.

Baltimore—Buffalo—Camden, N. J.—Chicago—Cleveland—Los Angeles
New York—Providence—Montreal—Toronto

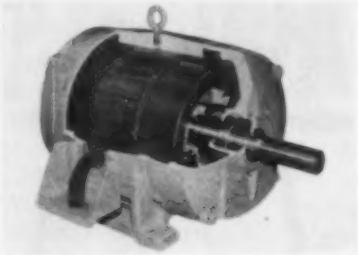
Equipment & Supply News

. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-23—Dyebath features separate dyebath, soap pot, and sink. Dyebath has a Monel-metal tank and stainless-steel cover. It holds 15 dyepots. Unit is controlled by a dual thermostat and timing device. The heaters deliver 215 F. Soap-pot section has six stainless-steel beakers. Each has individual controls for temperatures up to 212 F. Sink is also stainless steel. Electric Hotpack & Co., Inc.

E-24—Yarn inspector is fully transistorized. It automatically detects and counts yarn defects. Unit is designed to inspect several thousand yarns at once as they move through the warping process. Sensitivity of the instrument is adjustable. Lindly & Co., Inc.



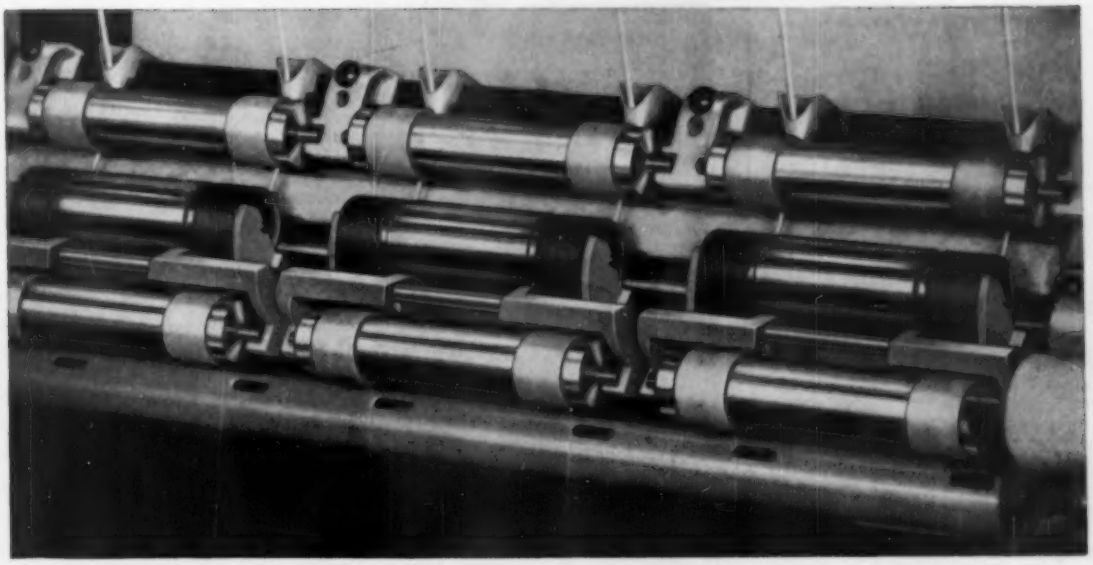
E-25—Squirrel-cage motor is designed with a special epoxy compound, applied under vacuum, covering each wire. It offers an open motor for applications normally requiring enclosed motors. Unit is available in 1 to 125 hp., a.c., for 2- or 3-phase service. Howell Electric Motors Co.

. . . *Turn to page* 150

Cleanest,
most efficient drafting unit
ever developed...

New Model
magnedraft

BY SACO-LOWELL



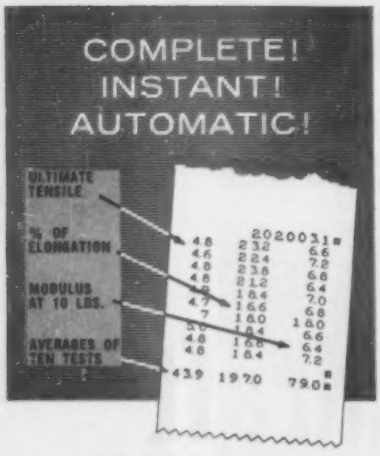
U. S. Patent No. 2,686,940

**Requires no lubrication in drafting zone —
Eliminates all conventional weighting equipment.**

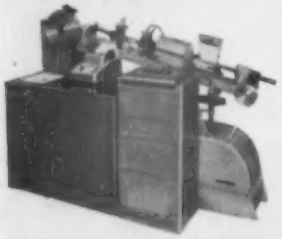
Uses forces of magnetic attraction to produce required roll pressures — completely eliminates anti-friction top and bottom rolls, saddles, stirrups, levers, hooks, springs and weights. New, unique top front roll support allows quick "end around" piecing up. Due to few component parts, maintenance costs are reduced to an absolute minimum. Mills report that MAGNEDRAFT spins stronger, more even yarn with a substantial reduction in drafting gear wear.

THE STANDARD OF QUALITY AND PERFORMANCE
Since 1813

Saco-Lowell Textile Machinery Division
SACO-LOWELL SHOPS
Executive and Sales Offices: EASLEY, SOUTH CAROLINA
Branch Sales Offices: ATLANTA, GA., CHARLOTTE & GREENSBORO, N. C., GREENVILLE, S. C., SACO, ME.



TIRE CORD TESTING *and* **RECORDING**



with the Scott Model IP-4,
***"SCOTAMATIC"** Inclined Plane Tester*

Here's *fully automated* textile testing and recording that can cut a big slice out of your quality control costs. Combining highly accurate digital computing devices with the Model IP-4 the "Scotamatic" Tester provides *unattended* testing of up to 200 tests per hour . . . with each test recorded instantly and permanently on tape.

"Scotamatic" operation removes human error from testing . . . permits a single operator to supervise several testers, or perform other duties. Once control settings are adjusted, the testing proceeds continuously and automatically, with tension and rate of stress precisely uniform. When samples break, stress-strain data is tape recorded, and each group of 10 tests is subtotaled for quick computation of sample averages.

Put comprehensive and economical yarn testing to work in *your* mill or lab. Write or call today for complete facts about the "Scotamatic" and other world-standard Scott Testers designed for the textile industry. Scott Testers, Inc., 95 Blackstone St., Providence, Rhode Island. Tel. DExter 1-5650 (Area Code 401).

SCOTT TESTERS

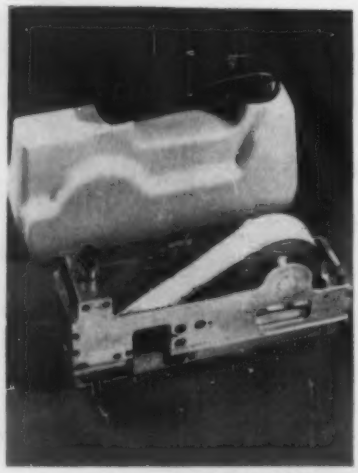
THE SURE TEST... SCOTT!

Equipment & Supply News

. . .*Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader Service Card, next to the back cover.

E-26—Pneumatic timing relay has a diaphragm assembly that eliminates the need for an exhaust valve. Exhaust air is blown back through the intake filters to keep them free of dust. The adjusting screw has a range from 0.2 to 60 seconds. Unit is suitable for pilot and control circuit duty up to 600 volts. The diaphragm, made of silicone rubber, withstands temperatures from —45 to 150 F. Cutler-Hammer.



E-27—Ticker printer and dispenser has been designed for use with pressure-sensitive tickets. Unit weighs 32 ounces and is 4½ inches high by 7½ inches long. Tickets are printed, dispensed, and applied by one downward motion of the unit. The chase uses standard movable type. Five lines of 10-point type, eight characters per line, can be printed. Ticket sizes range from ½x½ inch to 1½x1¼ inch. Wrapture, Inc.

E-28—Tape dispenser, model 4DF, is designed for Permacel 04 transfer tape. Unit is 15 inches long and lightweight. It offers one-hand operation. It removes tape interliner and applies tape as wide as one inch to the package surface. The silicone-rubber roll presses this tape firmly. Trigger action automatically cuts tape. An exposed tab provides a start for the next operation. Permacel.

E-29—Dry-chemical feeder handles chemicals used for water and waste treatment. The unit works on chemicals in powder, granular, or lump form up to ¾-in. diameter. The weighing system is accurate to ±1% with an operating range of 20:1. The entire feeder is housed in a dust-tight enclosure. Electrical operating controls, an integral part of the unit, are separated in a dust-tight compartment. Special built-in agitators, in the supply hopper, provide for smooth flow by preventing the chemical from jamming or holding-up. Infilco, Inc.

E-30—Surface active compound, called Air Wash #1, is used for air-cleaning systems. It removes sticky deposits and prevents the formation of new deposits. Compound doesn't foam or froth. It is available in 55-gal. drums or 5-gal. pails. Dearborn Chemical Co.

E-31—Manifold valve is designed for high-vacuum service. It is based on the differential-pressure diaphragm principle. Valve is available in a wide variety of materials such as aluminum, brass, epoxy, nylon, Type 303 stainless steel, and Teflon. It comes in tube sizes from ⅛ to 1 inch. The parts are designed for flare and flareless fittings or pipe threads. Frankel Engineering Laboratories, Inc.

. . . *Turn to page* 152

In this **Split Wedge Gate**

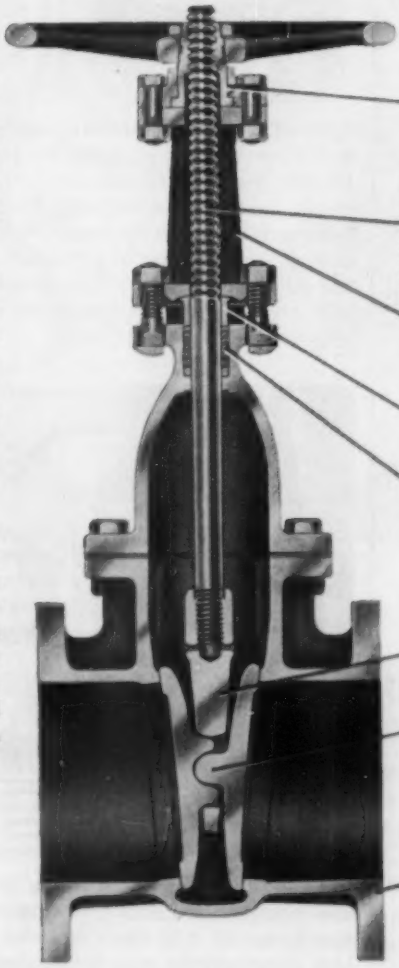
you can see why it pays to

Specify JENKINS for STAINLESS STEEL Valves, too

This picture shows the many points of excellence in the design and construction of Jenkins Fig. 1327 Split Wedge Stainless Steel Gate Valves. Compare them with any valve you know. You'll conclude that it's hard to beat Jenkins at making valves, no matter what the material.

But no picture can show the quality of the castings . . . the precision machining . . . the rigid inspection and testing that have gone into this valve. All of these are as important as design and metal alloys in assuring long, dependable, economical valve service. And, all of them are up to the peak standards for which Jenkins has been known for almost a century.

SEND FOR NEW CATALOG of Jenkins Stainless Steel Valves. You'll find in it the patterns you want, in a choice of alloys that satisfy the requirements of practically all corrosive services. Also, you'll see that these Jenkins valves meet valve industry specifications and the high standards established by the leading users of stainless steel valves. **Jenkins Bros., 100 Park Avenue, New York 17.**



WHEEL of high strength malleable iron designed for firm grip and easy operation.

YOKE BUSHING, easily renewable. Made of bronze, for ideal thread engagement with stainless steel spindle, to prevent seizing or galling of spindle threads. Bushing of stainless steel is optional.

SPINDLE has long thread bearing surfaces with correct lead for easy, tight closing. Screws into wedge carrier, then secured by a stainless steel pin.

YOKE BONNET has liberal space between yoke arms for easy access to packing box. Precision machined flange face assures uniform contact with gasket for a tight body-bonnet joint.

GLAND consists of two pieces — gland flange and gland follower — eliminates binding of follower in case gland bolts are tightened unevenly.

PACKING of Chevron-type Teflon in large packing box prevents leakage. Only a minimum load is required on gland, extending service life of packing.

WEDGE CARRIER connects wedge to spindle and raises or lowers it. Husky in size to stand any operating strains.

SPLIT WEDGE is the ball-and-socket design which automatically adjusts to the tapered seating surfaces for positive shutoff. The discs, revolving freely in the wedge carrier, produce a self-cleaning action on seating surfaces and reduce possibility of galling and seizing.

BODY —Through-port design for full, free flow. Ample wall thickness and good design provide extra strength to withstand stresses. End flanges conform to M.S.S. specs.

JENKINS
LOOK FOR THE JENKINS DIAMOND
VALVES

Sold Through Leading Distributors Everywhere

JENKINS BROS., 100 Park Avenue, New York 17, N. Y.

☐ Send the new stainless steel valve catalog

☐ Have a representative call on me

NAME & TITLE

COMPANY

ADDRESS

CIRCLE 151 ON READER SERVICE CARD 151

"MAKES ONE BEARING OUTLIVE TWO"

say Leading Textile Manufacturers

LUBRIPLATE Lubricants actually condition bearing surfaces and stop progressive wear. They prevent rust and corrosion and resist steam, hot water and many acids. They meet all conditions of the Textile Industry. Use LUBRIPLATE and make One Bearing Outlive Two.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose . . . LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.

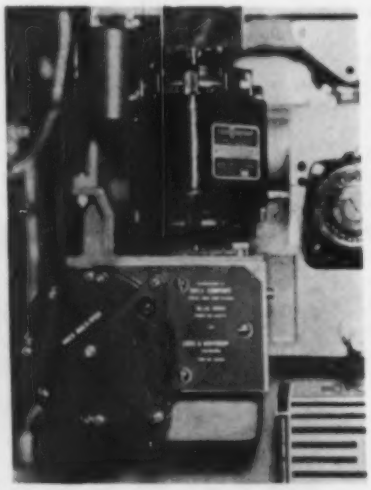
For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

Equipment & Supply News

. . . *Begins on page* 131

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

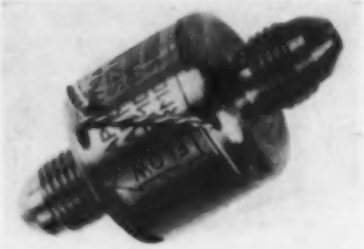
E-32—Pneumatic pressure controller operates at pressures up to 10,000 psi. Corrosion-resistant materials are used throughout. Unit features 1-100% proportional band, manual reset, differential gap action, and on-off snap action. Also available are remote reset and control by-pass. OPW-Jordan Corp.



E-33—Multi-speed chart drive is now available for Leeds & Northrup Speedomax G strip chart recorder. Unit eliminates the need for change gears. Eight different chart speeds can be selected by a dial. Speed can be changed while the recorder is running. Cost savings, in chart paper, are realized by dialing a slow speed for monitoring, then switching to faster speed for tests. Insco Co., Div. of Barry Controls, Inc.

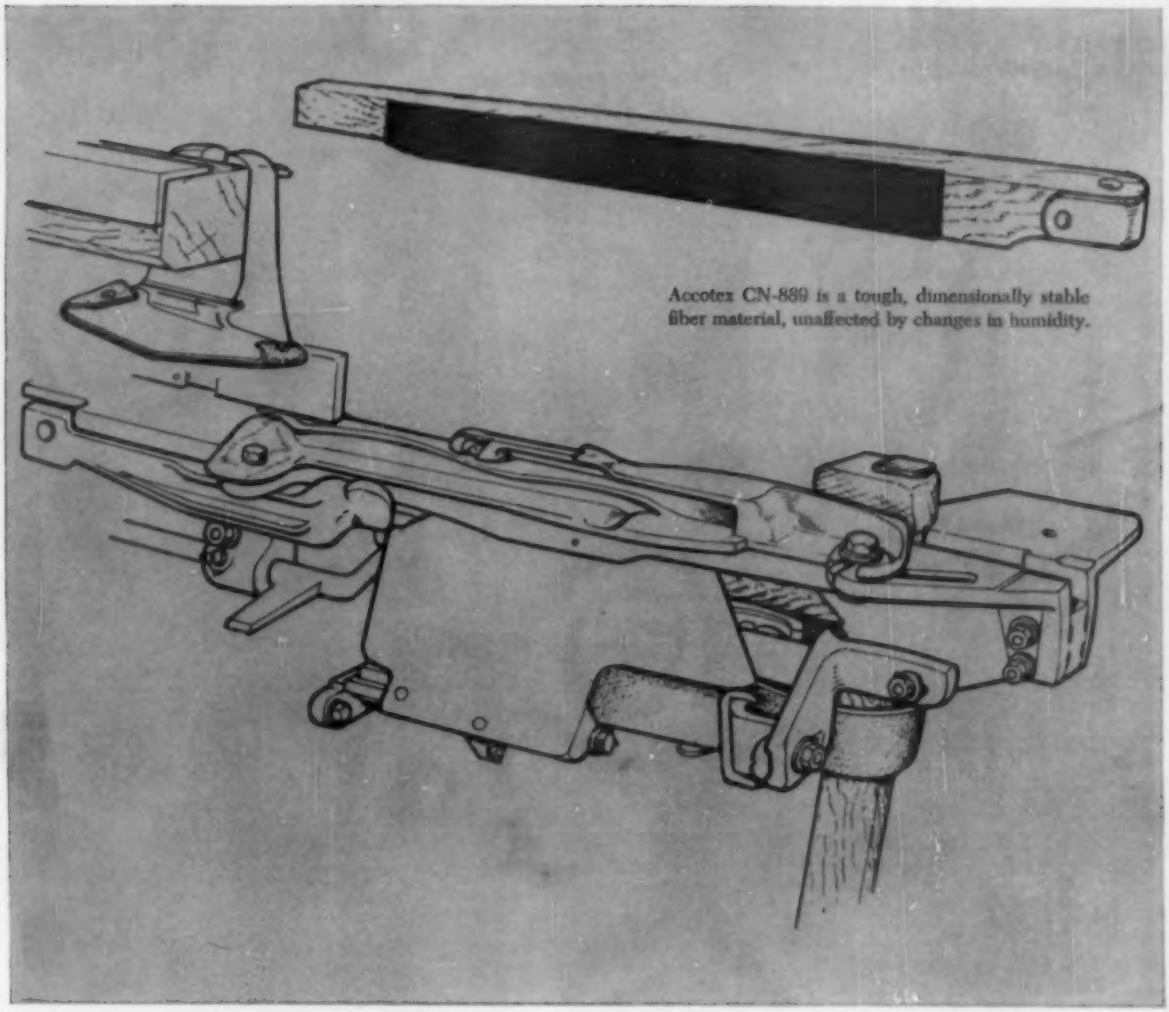
E-34—Trailers designed for lightweight plant duty. The platform is hardwood with a round-cornered steel frame. Standard sizes are 30- and 36-in. widths in 48- and 60-in. lengths. Wheels, mounted on double-ball race swivel casters have rubber tires that are removable. Unit is equipped with manual or spring-operated automatic couplers. Removable racks are available for ends and sides. Truck & Caster Co.

E-35 — Glass-reinforced polyester tanks come in vertical and horizontal types. Units provide for storage of corrosive liquids used in many industries, including textiles. Capacities range from 20 to 20,000 gallons. Liquid level can be observed through the translucent structures. Unit is lightweight, the 1,000-gal. tank weighs 350 pounds. Optional fittings include a manhole. Atlas Powder Co., Chemical Div.



E-36—In-line filters come in a range of pipe sizes from ⅛ to 12 inches. Removal ratings vary from 1½ to 149 microns. Unit handles a variety of fluids at temperatures ranging from −320 F. to 1,000 F. Filter elements are sintered woven-wire mesh. Pall Corp.

. . . *Turn to page* 154



Accotex CN-889 is a tough, dimensionally stable fiber material, unaffected by changes in humidity.

Reduce loom down time with this new Armstrong binder material

Accotex CN-889, a new fiber loom binder material developed by Armstrong, can bring important savings to your operations.

CN-889 helps keep loom down time at a minimum. Even where heavy plastic shuttles are used, it wears much longer than natural materials. And, because it is homogeneous, it wears more uniformly. It requires less break-in, less resetting, less frequent replacement—all of which means fewer shutdowns.

With all its advantages, CN-889 costs less than other loom binder materials. CN-889 is supplied to you in strips cut to fit your loom binders and box fronts.

Why not try Accotex CN-889 on your own looms? To arrange a test installation, contact your Armstrong man today. Or write: Armstrong Cork Co., Industrial Division, 6911 Dauphin Street, Lancaster, Pennsylvania. All Armstrong textile supplies are available for export.

Armstrong LOOM SUPPLIES

1860-1960 Beginning our second century of progress

every Delta flight carries air freight

INCLUDING jets

- Door to door delivery
- Scheduled service
- Handling by specialists
- Depend on Delta for

the BIG PLUS

Delta operates all-cargo flights and in addition carries freight on every passenger flight, including Jets. All-cargo flights serve Atlanta • Chicago • Detroit Cincinnati • Charlotte • Dallas • Houston Miami • New York • New Orleans Orlando • Philadelphia • Memphis

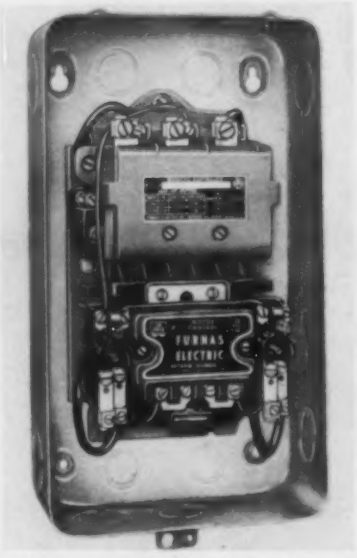
Delta AIR LINES AIR FREIGHT DOOR-TO-DOOR

GENERAL OFFICE: ATLANTA AIRPORT, ATLANTA, GA.

Equipment & Supply News

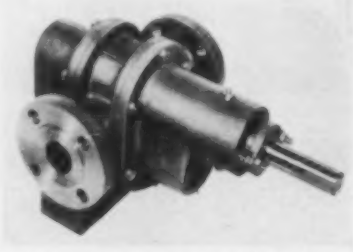
For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

. . . *Begins on page* 131



E-37—Magnetic motor starter, sizes 2 and 2½, has unitized construction. Thermal overload relays are trip-free and tamper-proof. Magnet coils are dual voltage 110/220 or 220/440 and dual cycle 50/60. Up to three auxiliary interlocks can be added for pilot duty. All components are front removable. Unit features low voltage magnet. It operates on motors up to 30 hp. and 550 volts. Furnas Electric Co.

E-39—Platform lift, controlled by the operator, moves from aisle to aisle easily. It is adaptable for overhead maintenance. Unit has lifting capacity of 1,000 pounds. It raises to 120-in. height. Operated by three 12-v. batteries, it travels at 4 mph. in forward or reverse. The hydraulic cylinders move at 40 fpm. Platform sizes available are 48x48 inches and 48x42 inches. West Bend Equipment Corp.



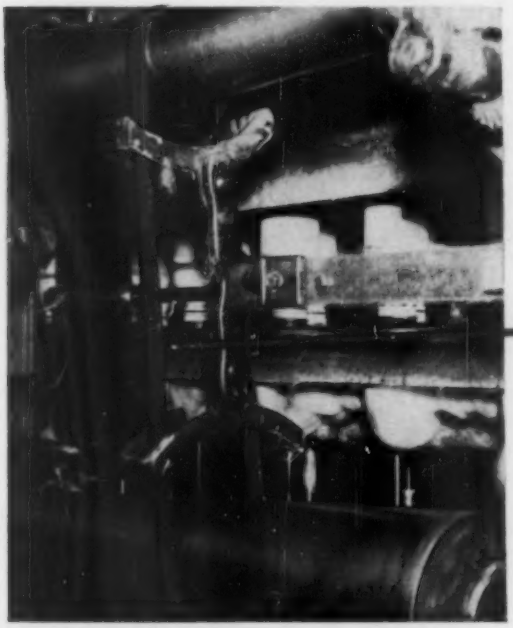
E-38—Gear pump, model 900, has 1½-in. ports with flows up to 27 gpm. Pump housings and shafts are 316 stainless steel, gears are Hastelloy C, phenolic, or polyamide resin. Wear plates are replaceable. It's designed with a long stuffing box for Teflon or other packing, and is equipped with a lantern ring. Speeds range up to 1200 rpm. with discharge pressures up to 150 psi. Eco Engineering Co.

E-40—Air clutch gives shockless starts. It can be used for motors up to 5 hp. at 1800 rpm. The unit is self-adjusting, requires no rotating joint, and is a combination motor sheave and clutch. The Model LW clutch uses a 3V-belt. Horton Mfg. Co., Inc.

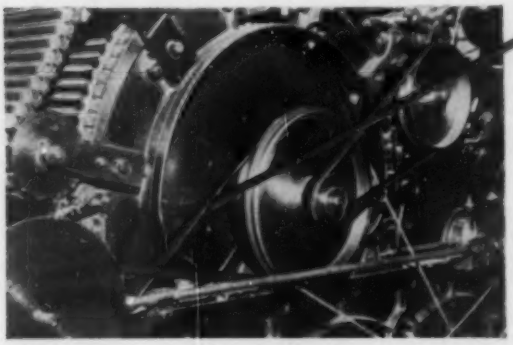
. . . *Turn to page* 156

MODERN EXTREMULTUS BELTING

TWISTERS • constant spindle speed • not affected by oil • outlasts all others



ROVING FRAMES • improves building action • cuts ends down in half • eliminates tension gear changes between doffs



CARDS • improves sliver quality • increases production • eliminates belt take-ups

- **IMPROVES QUALITY**
- **INCREASES PRODUCTION**
- **REDUCES MAINTENANCE**
- **CUTS COSTS**

TWISTERS

AUTO LEVELLERS

WINDERS

PICKERS

SPINNING FRAMES

ROVING FRAMES

OPENERS

LOOMS

WOOLEN CARDS

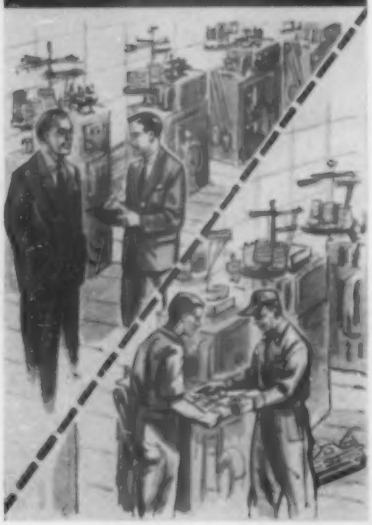
COTTON CARDS

EXTREMULTUS, INC.

25-11 40th Avenue, Long Island City 1, N. Y.

CIRCLE 155 ON READER SERVICE CARD

Get EXTRA Production Hours



WITH IVES REPLACEMENT PARTS

DOWNTIME IS EXPENSIVE . . .

A machine lost to downtime can mean a serious break in your production schedule. Ives replacement parts represent one of your best safeguards against the crippling effects of lost production.

Ives parts are specially made to give you an extra measure of smooth, trouble-free production time. Every Ives part is hand crafted to the exact requirements of your machine. This superior workmanship means extra wear life for you . . . at no extra cost!

Insure your plant's production schedule . . . specify "Ives Replacement Parts" for any of the following machines:

TOMPKINS · FIDELITY · SUPREME · SCOTT & WILLIAMS · BRINTON · WILDMAN · BANNER · BENTLEY · KIDDE · CRANE · REINER

IVES

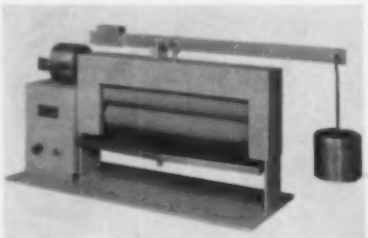
PHONE CHarter 9-0396-7

THE LOYAL T. IVES COMPANY, INC.
NEW-BRUNSWICK, N. J.

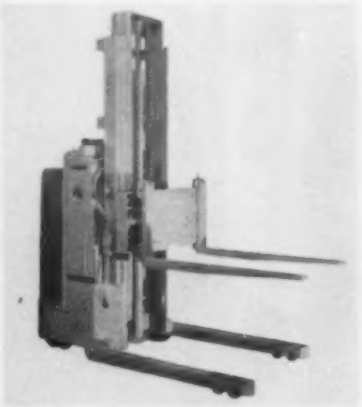
For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

E-41—Infra-red radiation burner has an internal distributor that assures uniform heat. The unit is 6x12 inches and rated at 30,000 Btu. Units can be mounted into panels or continuous lines. Up to 24 in-line units are serviced by one mixture inlet. Infra-Line, Inc.

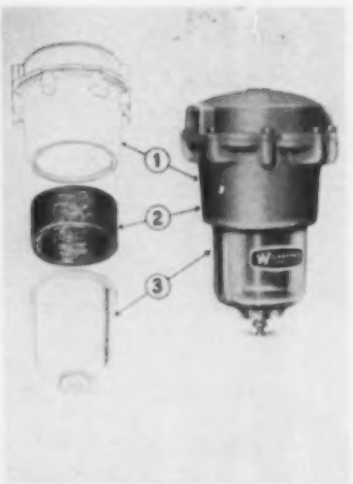
E-42—Electric-unit heater, type LUH, has Chromalox Fintube electric elements. Unit has built-in line voltage overheat protection. The fan motor is totally enclosed and has built-in overload protection. The horizontal louvers are adjustable. Models available offers heating capacities ranging from 17,065 to 85,325 Btu./hr. Electrical requirements range from 5 to 25 kw. and 208 to 480 volts service. Edwin L. Weigand Co.



E-43 — Laboratory padder and wringer is equipped with 2⅛-in.-dia. rolls 12 in. long. Unit is electrically operated and sample passes through rolls at one inch per second. Dead-weight loading can be adjusted from 5 to 100 pounds. Atlas Electric Devices Co.

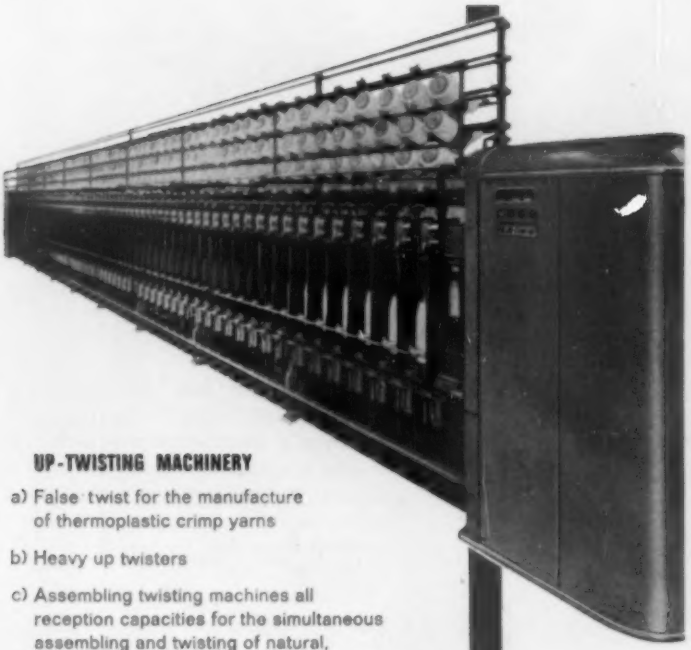


E-44—Narrow-aisle truck operates from a 24-v. battery. It is equipped with a side-shifting mechanism. The forks will move four inches to either side without moving the truck. Capacity is 3,000 pounds with a 48-in. load length. Fork elevation is 127 inches. Lewis-Shepard.



E-45 — Compressed-air filter has low-pressure drop. The filter cartridge is rigid, impregnated felt. Unit filters out particles as small as five microns. The filter can be cleaned in a solvent. The unit operates at pressure up to 250 psi., and the temperature range goes up to 250 F. Pipe-thread sizes available range from ¼ to 5 inches. Flow ratings range from 16 to 3,100 cfm. Wilkerson Corp.

. . . *Turn to page* 158



These machines secure top quality and highly even yarns

UP-TWISTING MACHINERY

a) False twist for the manufacture of thermoplastic crimp yarns

b) Heavy up twisters

c) Assembling twisting machines all reception capacities for the simultaneous assembling and twisting of natural, artificial or synthetic yarns, starting from all forms of supply packages, with yarn breakage stop motion and starting spindles

PREPARATION OF WARP MACHINERY

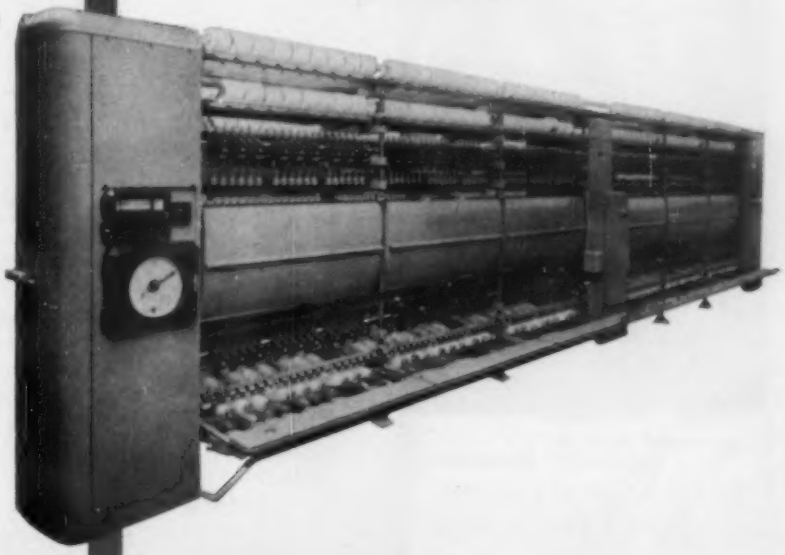
a) High production sizing machine with cylinders

b) High speed warping machines with movable drums, fit for the running with magazine creels or with truck creels.

WINDING MACHINERY

a) Adjustable cone-winders with delivery attachment for the realization of adjustable winding hardness, feeding from hanks, or overend from bobbins.

b) Standard adjustable cone-winders for cylindrical or conical winding, straight edged or "pine-apple", with natural, artificial or synthetic yarns.



ATELIERS ROANNAIS
de Constructions Textiles
Rue Cuvier - ROANNE - Loire - FRANCE
Tel. 40-61-62-63 et 40-60 - Cable : Constructiles
Telex. N° 21.409 - ARCTEX - ROANNE

WHITIN MACHINE WORKS
WHITINSVILLE MASS. U.S.A.

PUBLICO 60.3.TW

CIRCLE 157 ON READER SERVICE CARD

For more information on any of these items, circle appropriate number on the Reader Service Card, next to the back cover.

NEW!

GREASELESS, SMEARLESS, GUARANTEED EFFECTIVE

NEUTRO-STAT ANTI-STATIC SPRAY

Neutro-Stat Aerosol Spray is guaranteed to work on all textile materials and machinery. Prevents clinging and other static slowdowns. Made by SIMCO, leader in the field of static elimination, it's non-oily, non-toxic, and non-flammable. Mail coupon today!

TRY NEUTRO-STAT ON MONEY-BACK GUARANTEE!

Ship____16 oz. cans of Neutro-Stat @ $2.75

____cartons (1 doz. 16 oz. cans) @ $27.50

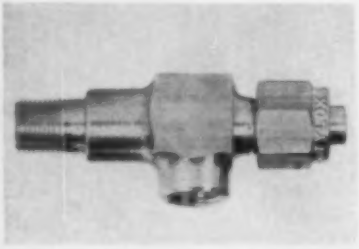
FIRM_____

ADDRESS_____

SIGNATURE_____

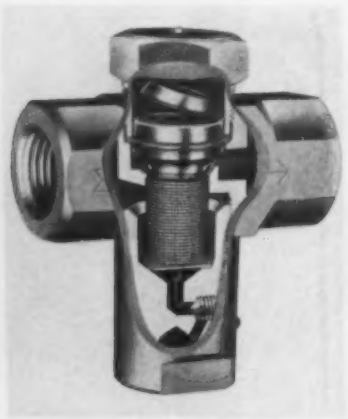
the SIMCO company
920 Walnut St., Lansdale, Pa.

E-46 — Production control and scheduling gets a boost with the Productograph system. Each unit is custom-designed for the individual plant. Unit records, audio-visually, operating time, downtime, and production rate. The console receiving unit can supervise up to 200 machines. It has a built-in communication system. Unit is useful for assisting in accounting functions. Farrington Mfg. Co.



E-47—T-fitting eliminates the need for adapters when applying pressure gages to hydraulic lines. The unit has four seals against pressure, temperature, vibration, and surge. Fitting is available in sizes from ⅛ to 2-in. diameter with pipe threads. The unit is also available in aluminum, brass, Monel, steel, and type-316 stainless steel. Clifford H. Kroening, Inc.

E-48—Calculating machine, model LA-9, takes up no more space than a desk telephone. Unit offers three dials that eliminate guesswork when multiplying. Controls are grouped for one-hand operation. Automatic division is built-in. Two capacities are available: LA9-203, 10-column keyboard, 10-counting dials, 20-place result dials; and LA9-163 with 8-8-16 capacity. Monroe Calculating Machine Co.



E-49—Steam trap incorporates a strainer and a blow-down valve in one unit. Trap can be used on steam lines ranging from 8 to 600 psi. It has only two ½-in. pipe connections for ease of installation. The blow-down valve has a threaded outlet. Yarnall-Waring Co.

E-50—Instrument measures static charge while man-made-fiber yarns and fabrics are being manufactured. A roller picks up these charges on the yarn and the fabric during production. Unit has eight ranges from 0 to 5,000 volts. A probe electrode permits measurement directly on a fabric surface. The instrument is designed to permit simultaneous readings and recording. Fabrionic Corp.

E-51 — Stainless-steel propellers come in sizes from 3- to 16-in. diameter. Units are bored to specification. Propellers up to 10-in. diameter can be drilled up to a 1-in. bore. Over 10-in. diameter, they can be drilled from 1- to 1½-in.-dia. bore. Terriss-Consolidated Industries.

Men who think BIG

choose the WHITIN COMMODORE® Twister

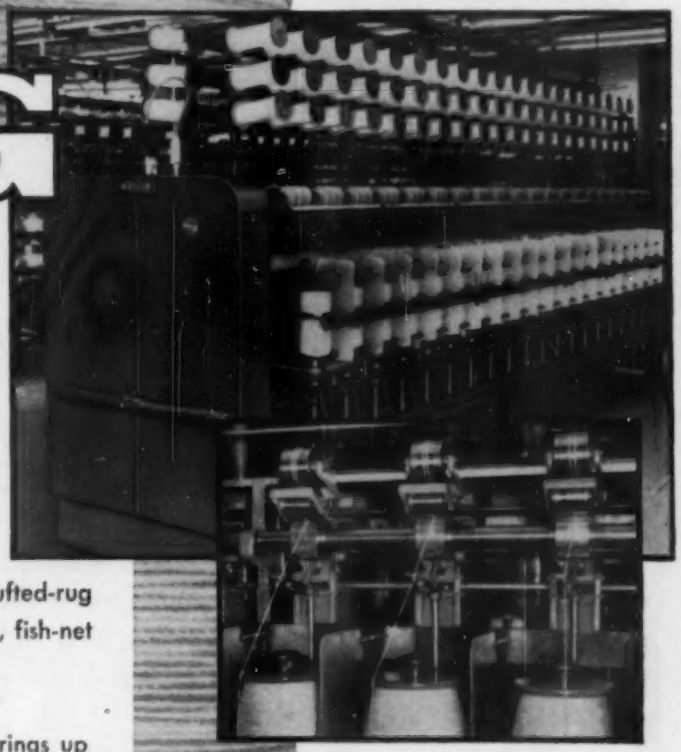
The COMMODORE is designed to do just one job — heavy-duty, coarse yarn twisting, and to do it more *profitably* for you.

The COMMODORE is ideal for twisting a wide variety of plied, heavy and coarse yarns such as tufted-rug yarns, carpet yarns, duck, tire cord, fish-net cord and paper.

* * * * * * * * *

With a 12" traverse and giant rings up to 8½" in diameter set in heavy steel ring rails, it is capable of processing yarns as coarse as 45,000 denier on packages holding as much as 11.0 lbs. of yarn. The COMMODORE has a rugged, solidly-built frame — a frame that can carry its tremendous loads without flinching. It is liberally equipped with anti-friction bearings, has precision-cut gearing and a sturdy pulley-type tape drive. Extra heavy ball bearing spindles mounted in cast iron spindle rails easily rotate these heavy packages at speeds reaching 4000 R.P.M.

A Big Twister to do a Big job — with all the advantages of **big, Big, BIG** packages.



Of particular interest to woolen yarn and carpet mills is the famous Whitin selective-type trap motion. It is available as optional equipment and can accommodate up to 6 ends. Proven on scores of installations, it has established an industry-wide reputation for efficient, positive and trouble-free operation.

Write Today for Descriptive Folder

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Mount Hope

STAINLESS STEEL POTEYES

GENTLY GUIDE CLOTH . . .

from Operation to Operation . . .

Mount Hope Poteyes are constructed of long-lasting, smooth stainless steel which reduces friction, safely handles the most delicate fabric. Designed to function efficiently at high speeds, they minimize pull and tension — take heavy loads perfectly.

THREE TYPES — Standard, Free-Wheeling and Turnaround — are available to fulfill any directional requirement . . . Easily adapted to your present brackets.

For more information write to:

MOUNT HOPE MACHINERY COMPANY

50 Fifth Street, Taunton, Mass.
Plants at Taunton, Mass. and Charlotte, N.C.

CIRCLE 253 ON READER SERVICE CARD

GREATER PROTECTION to your AIR LINE!

M-B

AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1 *and* TRAP

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

M·B PRODUCTS

46 VICTOR AVE., Div. 11
DETROIT 3, MICHIGAN

What's In It For You?

If you're asking about Textile World reprints, the answer is simple: there's plenty of useful, up-to-date information in every TEXTILE WORLD reprint . . . the kind of information that helps you . . .

- **Cut production costs**
- **Boost productivity**
- **Smooth over touchy human-relations problems**
- **Get the most out of your employees (and yourself, too)**
- **Assure yourself of the kind of background that top-management looks for in tapping men for advancement.**

All these benefits can be yours. What better way than to arm yourself with a collection of timely Textile World reprints? None, we say.

See a full listing of available titles on page 190.

TEXTILE WORLD

Reader-Service Department
330 West 42nd Street
New York 36, New York

TEXTILE WORLD . . .

Calendar

November

AATT, monthly meeting, Della Robbia Room, Hotel Manger-Vanderbilt, New York, N. Y., Nov. 2

Thread Institute, annual meeting, Hotel Commodore, New York, N. Y., Nov. 10

American Institute of Electrical Engineers, conference on electrical application in the textile industry, N. C. State College, Raleigh, N. C., Nov. 10 & 11

Alabama Textile Operating Executives, carding and spinning discussions, Georgia Institute of Technology, Atlanta, Ga., Nov. 12

Alabama Textile Education Foundation, fall meeting, Thach Auditorium, Auburn, Ala., Nov. 12

Textile Education Foundation, Inc., A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Nov. 12

Narrow Fabrics Institute, Inc., fall meeting, Roosevelt Hotel, New York, N. Y., Nov. 14 & 15

ASME, annual winter meeting, Statler-Hilton Hotel, New York, N. Y., Nov., 27 to Dec. 2

Power & Mechanical Engineers Exposition, New York Coliseum, New York, N. Y., Nov. 28 to Dec. 2.

December

AATT, monthly meeting, Della Robbia Room, Hotel Manger-Vanderbilt, New York, N. Y., Dec. 7

AATCC, New England Section, Colonial Country Club, Lynnfield, Mass., Dec. 9

1961

January

AATCC, Piedmont Section, Poinsett Hotel, Greenville, S. C., Jan. 21

March

American Cotton Manufacturers Institute, annual meeting, Fontainebleau Hotel, Miami Beach, Fla., March 23 to 25

April

Alabama Textile Manufacturers Association, 60th-Anniversary Convention, Buena Vista Hotel, Biloxi, Miss., April 12 to 14

Georgia Textile Operating Executives, spring meeting, Hightower Building, Georgia Institute of Technology, Atlanta, Ga., April 23

45th Knitting Arts Exhibition, Civic Auditorium, Atlantic City, N. J., April 24 to 28

work ***... says "Mark-O-Merit"®***

moves *faster*

when you use...

Shamrocks

Let a Shamrock representative check your plant. His constant contacts with mill operations can prove helpful to your problems.

Your Shamrock representative is a trained *specialist* in the application of Shamrock Canvas Baskets and Trucks to varied plant operations. He can help in suggesting efficient work flow systems—using standard or made-to-order Shamrock styles to fit your particular plant needs. *Get his helpful advice!*

Shown above is the Shamrock No. 19 Truck, leather reinforced around top rim and at ends of strips; this Shamrock is being used for transporting yarn on cones. For complete information, write direct or contact nearest sales office listed below. MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 55 West 42nd St., PE 6-0615; ATLANTA—W. E. Petway, 723 East Densley Drive, North Decatur, Ga., ME 6-3192; FORT WORTH—V. M. Hooton, 4220 Normandy Road, Tel. JEfferson 6-6564; WEST COAST—Gene Daniels Sales Co., P. O. Box 846, La Puente, Calif., YOrktown 4-1111. Export Mgr.—R. A. Auerbach, Easton, Pa. Cable Address: "Natly."

SHAMROCK

canvas baskets • hampers • trucks

CIRCLE 254 ON READER SERVICE CARD

Skilled Hands Know the Difference...

Genuine

RIDGID

At Your Supply House!

The Ridge Tool Company, Elyria, Ohio, U.S.A.

CIRCLE 161 ON READER SERVICE CARD

TEXTILE WORLD . . . New Literature

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

L-1—Parallel shaft speed reducers, a 36-p. booklet (#2719), describes 57 sizes of equipment. Contains 16 pages of horsepower ratings to aid in selection of correct drive. Other tables for overhung loads, extended shafts. Link-Belt Co.

L-2—Reduced-voltage starters, an 8-p. brochure (GEA-6860A), gives definition, uses, selection tables for starters. Includes photos locating constituent parts. Diagrams show typical schematic connections. General Electric Co.

L-3—Textile Leathers describes applications of leather to textile industry in round and flat belting and in accessories. The 14-p. catalog includes a horsepower-rating table and belt-selection data. Charles Bond Co.

L-4—Electromagnetic drives for conveyors, fans and pumps, winders, and many other uses are catalogued in 12-p. bulletin. Booklet gives principles, applications of specific kinds of drives. Photographs. Westinghouse Electric Corp.

L-5—Centrifuges of many types, including refrigerated, vacuum, and automatic models, are listed in illustrated 16-p. handbook. Includes list of rotors and attachments for each model, plus schematic drawings. Lourdes Instrument Corp.

L-6—A.C. and D.C. generators for supplemental, emergency, operational, and special power needs are listed on 2-p. sheet. Photographs show four models. Includes kw. output, voltage, frequency, and rpm. facts. Leland Ohio Electric Co.

L-7—Lighting bulletin explains requirements for proper illumination in textile plants, makes recommendations on lighting needed for specific jobs. Lists costs and includes pictures of plant installations. General Electric Co.

L-8—Flexible shaft handbook, in file-card form for easy reference, describes and illustrates varied uses of flexible shafts. The 90-p. book contains photos, drawings, and specifications for each model. S. S. White Industrial Div.

L-9—Stapling and tacking equipment, including air-operated models, is discussed in 32-p. directory, with photographs of on-the-job applications. Lists specific and unusual uses along with descriptions. Fastener Corp.

L-10—Manual motor starters, a 12-p. bulletin (GEA-6358C), describes starters for motors up to 7½ hp. Includes prices and photographs for each unit, with call-outs explaining special construction features. General Electric Co.

Robert E. Pomeranz
President, Roberts Company
Sanford, North Carolina
Mfrs. of Textile Machinery

"Sales of Roberts ARROW Spinning Frames for 1960 should be 50% over 1959, which jumped 60% over 1958. Growth needs increasing funds so that customers can be adequately served. In Textile Banking Company, we have found a policy that is simple and realistic. Its management has an unlimited desire to accommodate itself to our needs and those of our customers."

* * *

TBC credit and financial services are available in many fields of industry. They are most effective for manufacturers with annual sales of $500,000 and over. A TBC officer will give prompt attention to any inquiry.

TEXTILE BANKING COMPANY
55 Madison Ave., Dept. TW, New York 10, N. Y.

SUBSIDIARIES:
T.B.C. Associates, Inc., New York
Southwest Texbanc, Inc., St. Louis
Pacific Texbanc, Inc., Los Angeles

4 ways TO M... BUSINESS GROW

BTC

Write for our new booklet

ENGINEERING

L-11—Dust-control equipment of four basic types—dry centrifugals, wet collectors, fabric collectors, and electrostatic precipitators—is pictured and described in 12-p. guide. Includes cut-away diagrams. American Air Filter Co., Inc.

L-12—Ball bearings—along with technical and engineering data, specifications, diagrams, illustrations, and typical applications—are the subject of a new catalog (No. 454). Sealmaster Bearing Div., Stephens-Adamson Mfg. Co.

L-13—Reducing and relief valve for water, oil, air, or gas is discussed on 2-p. sheet. Includes valve drawings, capacity charts, valve features, operation, applications, descriptions, and ordering information. Atlas Valve Co.

L-14—Hydraulic products for industrial, marine and ordinance fields are presented in 74-p. directory. Contains photographs, drawings, tables, curves, and circuit diagrams for each family of products. Vickers Inc., Div. of Sperry Rand Corp.

L-15—Combustion safeguards, both automatic firechecks and safety blowouts, are presented in 12-p. brochure with photographs, engineering drawings, and plans for proper applications. Also accessories. Selas Corp. of America

L-16—Turbine supervisory instruments are listed and fully described in 12-p. bulletin (GEZ-3078). Companion bulletin GEZ-3077 details credit plan for exchange of old models on new systems. Well-illustrated with photos. General Electric Co.

L-17—High-frequency bus duct is presented in 12-p. report with descriptions, dimensions, specifications, and engineering and test data. Booklet discusses applications to many kinds of industrial operations. Westinghouse Electric Corp.

L-18—Door interlock switches, a 2-p. sheet, outlines the uses of these devices as safety equipment on electronic equipment. Gives prices, mechanical characteristics, electrical ratings, drawings. Micro-Switch Div. of Minneapolis-Honeywell Co.

L-19—Coils and their properties which guarantee an increased number of ampere turns are described in 4-p. folder. Compares new coils with conventional models and presents pictures of varieties available. Tur-Bo Jet Products Co., Inc.

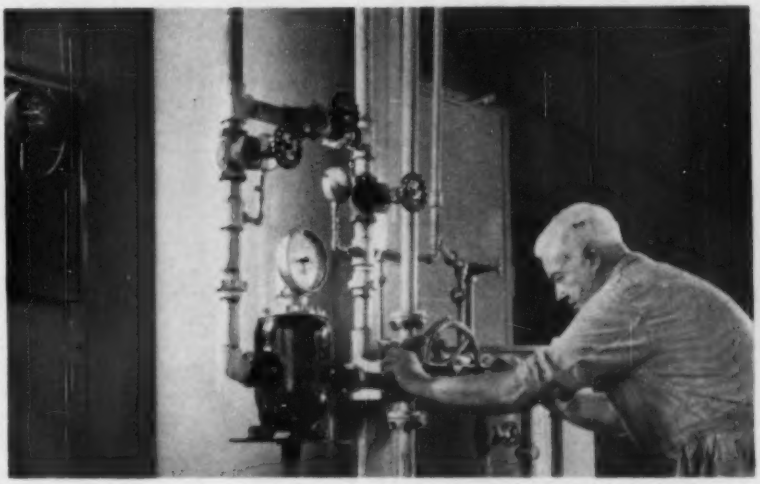
L-20—Spherical bearings and rod ends, with complete technical and engineering data, diagrams, specifications illustrations, and typical applications are presented in new bulletin. Sealmaster Bearing Div., Stephens-Adamson Mfg. Co.

L-21—Viscometers for atmospheric pressure applications are presented on 2-p. sheet. Includes sections on special features and principle of operation. Also photograph and engineering drawing Number V-1230. Norcross Corp.

L-22—Pumping and hydraulic engineering manual gives practical information for engineers' everyday use. Includes charts and formulas as well as reference tables. Peerless Pump—Hydro-dynamics Div.

. . . *Turn the page*

FLUIDICS* AT WORK



NEW FROM PERMUTIT!* Complete Line All Purpose Model BD Economy Softeners

Permutit® Model BD Softeners answer industry's demand for more and more soft water at lower cost. Taking advantage of new design advancements and standardized mass produced components, Model BD Softeners now make Permutit quality available in a complete line, ready for prompt delivery from stock at economy prices.

BD Softeners contain only high capacity Permutit Q Resin. Absence of subfill eliminates possibility of upsetting bed, makes installation simpler, less expensive. Exclusive double-dish underdrain is shipped completely assembled, further simplifies installation. Standard valve is the famous Permutit Multiport® type.

Permutit Model BD Softeners are available in the following sizes and capacities:

Shell Diam.	Straight Ht.	Flow Rate Average	Softening Capacity
30″	6′	40 gpm	510 Kgr
36″	6′	56 gpm	750 Kgr
42″	6′	77 gpm	1020 Kgr
48″	6′	100 gpm	1380 Kgr

For specification and complete information, write to our Permutit Division, Department TW-110, 50 West 44th Street, New York 36, New York.

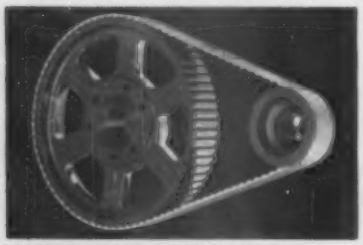
*FLUIDICS is the Pfaudler Permutit program that integrates knowledge, equipment and experience in solving problems involving fluids.

PFAUDLER PERMUTIT INC.

Specialists in FLUIDICS . . . the science of fluid processes

CIRCLE 163 ON READER SERVICE CARD 163

WOOD'S POWER TRANSMISSION PRODUCT NEWS



POSITIVE ACTION—LONG LIFE

Wood's Timing Belt Drives provide positive, slip-free action. Belts are all muscle. No high initial tension, tension devices or lubrication needed. Drives are light weight, compact . . . quiet and clean. Wide load and speed range. Equipped with famous Sure-Grip Bushings. Write for Bulletin 2100.

CIRCLE 255 ON READER SERVICE CARD

HIGH PERFORMANCE VARIABLE

Wood's stationary control, "VPS" Variable Speed Drives won't freeze or stick. No lubrication is needed. Speed changes are made accurately and quickly by turning an adjusting screw from either side. Initial, operating and maintenance costs are lower. Write for Bulletin 1100.

CIRCLE 256 ON READER SERVICE CARD

REVOLUTIONARY NEW VARIABLE

Revolutionary resilient cam follower construction of Wood's new "MCS" motion control, variable speed drives holds constant driven speeds under varying torque loads. Like the "MS," the "MCS" won't freeze or stick. Check oil only once or twice a year. Write for Bulletins 8102, 4101.

CIRCLE 257 ON READER SERVICE CARD

MPT/360B

Woods

T. B. WOOD'S SONS COMPANY

CHAMBERSBURG, PENNSYLVANIA

ATLANTA • CAMBRIDGE • CHICAGO
CLEVELAND • DALLAS

NEW LITERATURE

. . . *Begins on page* 162

For more information on any of these items, circle appropriate number on the Reader Service Card, next to the back cover.

L-23—Hot-water balancing valve and its "memory" operation is explained in 4-p. folder. Diagrams illustrate every step of operation. Piece gives measurements and construction information. Dept. PD, American Air Filter Co., Inc.

CHEMICALS & SUPPLIES

L-24—Concentrated detergent — nonionic, synthetic, organic—for compounding cleaners for manual and machine use is discussed in 9-p. mimeographed report. Suggests specific textile applications. Atlas Powder Co., Dept. C.

L-25—Commercial glasses are discussed with special emphasis on thermal stress, heat transmission, electrical properties, corrosion resistance and viscosity data. Contains charts, graphs, temperature-conversion table. Corning Glass Works.

L-26—Wax booklet chronicles developments in wax industry and relates them to products for specific industrial uses. Special section deals with industrial-maintenance floor waxes and textile coatings. Foster D. Snell, Inc.

L-27—Rubberized abrasives in wheel, point, and stick form for microdeburring, smoothing, and polishing are listed in 22-p. manual. Gives case histories of typical industrial applications and recommendations. Cratex Mfg. Co., Inc.

L-28—Corn in Industry outlines uses for corn products in many industrial situations. The 64-p. book gives specific applications of corn derivatives to textile operations, with prospects for products. Corn Industries Research Foundation.

L-29—Diisocyanates and urethanes and their applications as coatings, fibers, and foamed resins are related in 8-p. digest. It lists history of their development and gives their chemical properties. National Aniline Div., Allied Chemical Corp.

L-30—Resins for emulsion polishes, their recommended formulations, preparation techniques, emulsion evaluations, and test methods are described in 22-p. handbook. Discusses flood polishes and textile finishes. Schenectady Varnish Co.

L-31—Polyethylene emulsions are discussed and compared in 6-p. mimeographed report. Offers 8 formulas for both nonionic and anionic emulsions. Directs preparation of emulsions for specific needs. Atlas Powder Co.

MATERIALS HANDLING

L-32—Conveyors for small parts are pictured and described in 8-p. bulletin. Photographs show models and application in a plant. Includes magnetic types in descriptions, specifications of five varieties. Rapids-Standard Co., Inc.

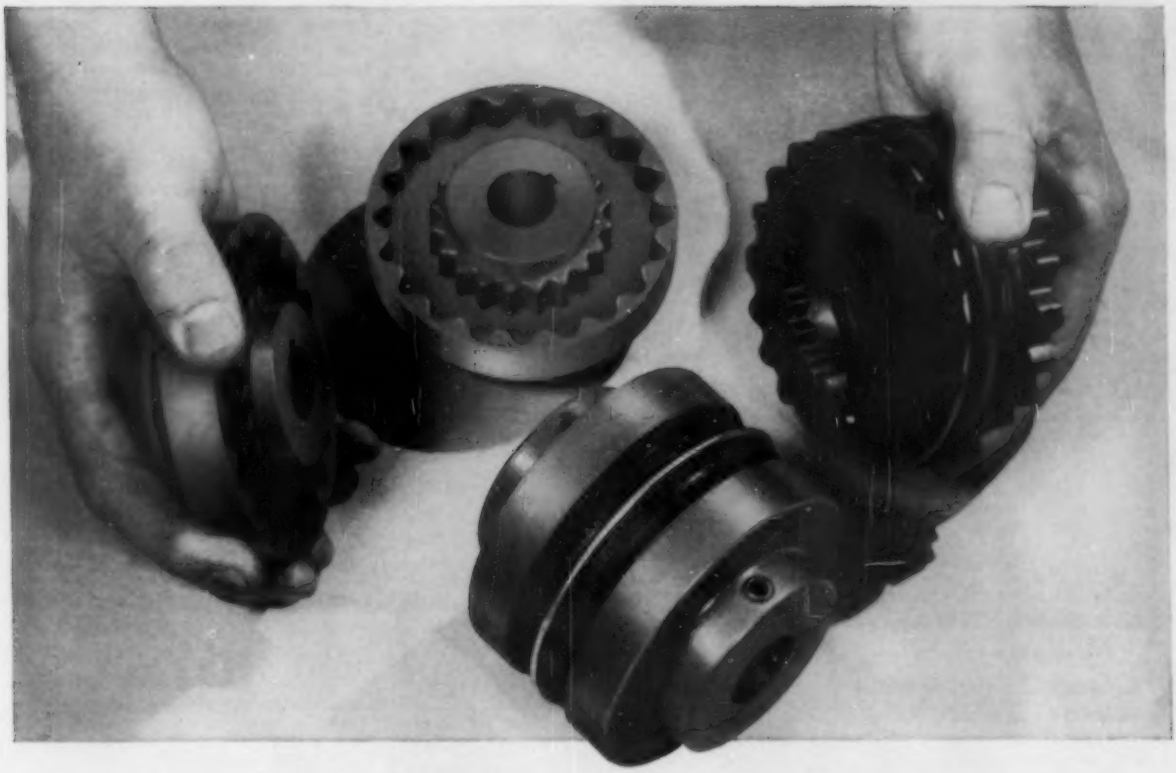
L-33—Stacker crane and its uses in savings storage space are related in 12-p. booklet. Photographs show crane's usefulness on varied industrial situations. Diagrams illustrate principle of operation. American MonoRail Co.

L-34 — Materials-handling-equipment catalog covers conveyors, casters, wheels, framing material, storage racks, and hand trucks. Also outlines principles of a co-ordinated materials-handling system. Illustrated. Rapids-Standard Co.

L-35—Pallet-handling procedures are related in handy 4x5½-inch, 16-p. digest. Discusses advantages of wooden and steel pallets, alternate loading patterns and techniques of operating fork-lift trucks. Advertising Dept., Raymond Corp.

L-36—Plastics-handling technique based on bulk-moving procedures is illustrated in 6-p. foldout. Bulletin presents experiences of two companies using bulk-handling procedures with pictures and diagrams. Dracco Div. of Fuller Co.

. . . *Turn to page* 166



"Sure-Flex" Coupling's unique design, 4-way flex are . . .

A "SURE CURE" FOR SHOCK, VIBRATION, SHAFT MISALIGNMENT

Unique design and 4-way flexing action enable Wood's "Sure-Flex" Couplings not only to absorb all types and combinations of angular and parallel misalignment and end-float . . . but from 5 to 15 times more shock and vibration than other leading flexible couplings. There are only four basic parts which lock together without clamps or screws, tightening securely under torque to provide smooth, dependable power transmission. There is no metal-to-metal contact, no wear, no need for lubrication or maintenance. "Sure-Flex" Couplings are easily installed, unaffected by abrasives, dirt or moisture. Operation is noiseless. Get all of the facts. *Write for Bulletin 5103.*

Wood's

T. B. WOOD'S SONS COMPANY • CHAMBERSBURG, PENNSYLVANIA

SF/160A

ATLANTA • CAMBRIDGE • CHICAGO • CLEVELAND • DALLAS

STOP
STATIC
CHAPMAN STATIC ELIMINATOR
"Statomatic" MODEL B1
★ GUARANTEED TO REMOVE STATIC AT POINT STATIC BAR IS APPLIED
★ ABSOLUTELY NO SHOCK OR HAZARDS SAFE TO USE
★ COMPACT COMPLETE EQUIPMENT
★ SMOOTH MODERN DESIGN
★ LOW COST YEARS OF TROUBLE FREE SERVICE
★ EASY TO INSTALL SIMPLY ATTACH TO YOUR MACHINE & PLUG INTO ANY STANDARD 115 VOLT OUTLET
WRITE FOR FREE BULLETIN 79 SHOWING OUR COMPLETE LINE
Chapman Static Eliminators
MANUFACTURED BY
THE PORTLAND COMPANY
28 FORE STREET • PORTLAND, MAINE
Originators and Leading Manufacturers of Static Eliminators . . . . since 1904

CIRCLE 258 ON READER SERVICE CARD

J. E. SIRRINE COMPANY

Engineers
Since 1902

Textile Mills & Finishing Plants
Water Supply
Waste Disposal
Steam & Hydro Power Plants
Appraisals
Pulp & Paper Mills
Surveys & Reports

GREENVILLE,
SOUTH CAROLINA

NEW LITERATURE

. . . Begins on page 162

For more information on any of these items, circle appropriate number on the Reader-Service Card, next to the back cover.

GENERAL

L-37—Electronic-control systems for valve-controlled type classroom unit ventilators are discussed in 4-p. brochure. Cut-away diagram illustrates complete unit, photographs show parts. Includes drawings and specifications. Barber-Colman Co.

L-38—Probes, extension leads, and switchboxes are presented and illustrated in single-sheet equipment catalog. Includes price, description of each item and reproduces alternate thermometer dial-plates. Yellow Springs Instrument Co.

L-39—Water-hardness analysis is discussed in 2-p. leaflet. One side explains theory and method of analysis. The other reproduces a flow diagram and an actual recording of hardness as an example. Technicon Controls, Inc.

L-40—Gages, thermometers, and controls, 20 different models, are presented in a 6-p. foldout. A photograph shows each model and is accompanied by text covering information on construction, dimensions. United States Gauge.

L-41—Steel-locker catalog lists 9 varieties in 24 pages and gives recommendations for locker layout. Illustrations and dimensional information accompany each description. Also includes accessories. Penco Div., Alan Wood Steel Co.

L-42 — Steam-purity-measurement technique is revealed in 2-p. sheet. Discusses problem of turbine and superheater deposits and their cure. Photograph shows recording devices and charts taken from installations. Betz Laboratories, Inc.

Too Many Records Or Not Enough?

That's a question every mill manager should have a fast answer to. Look at it this way:

Too many records means you're taking up valuable space with old business records that you really don't need any more.

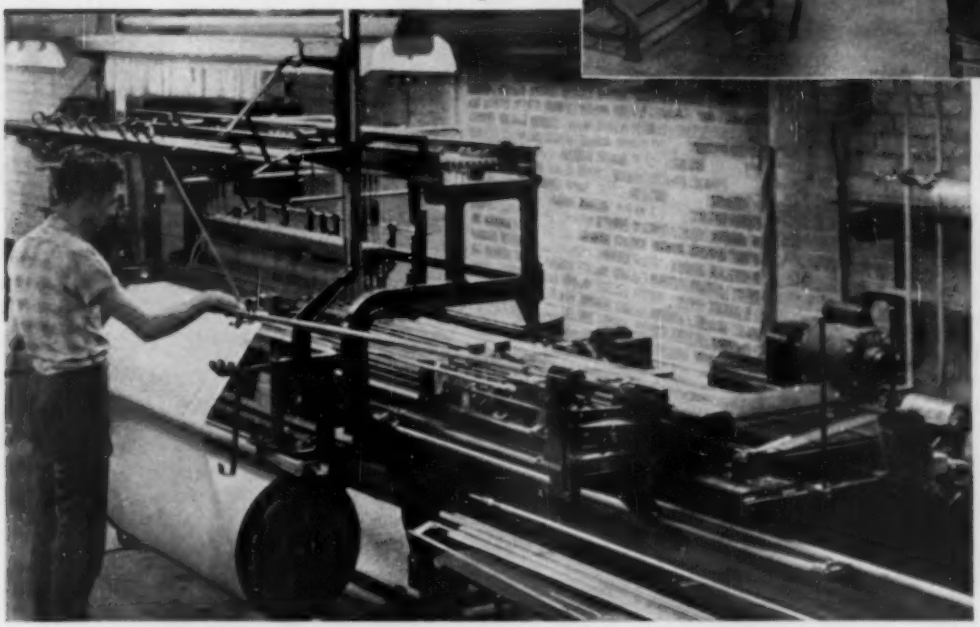
Too few records might mean that you aren't keeping track of your day-to-day operations well enough. Might mean that costs are soaring, but that you don't have any way to find out.

What to do? As good a starting place as any is to read TEXTILE WORLD'S reprint: "What to Do About Those Business Records?" Which ones to keep? How long? Government requirements. Historical files. Time limits. Standards. Microfilm. These and many other aspects of the business record problem are fully explored in "What to Do About Those Business Records?" Yours for only 35¢.

Write:
Reader-Service Department

TEXTILE WORLD
330 West 42nd Street
New York 36, New York

IF YOU ARE
ENTERING
YOUR **WARPS**
LIKE THIS



WE SUGGEST YOU LOOK INTO THE

BARBER-COLMAN
WARP DRAWING MACHINE

With this machine, the time-eating task of drawing-in is speeded up tremendously. A power-driven needle, running at 127 to 230 strokes per minute (depending on the number of weaving elements to be entered), draws each thread in succession through the correct selection of drop wire, heddle, and reed dent. This correct selection is made accurately *and automatically* for each pick by a sequence of mechanical actions controlled by a pattern strip punched in accordance with the designer's draft. Very substantial reductions of drawing-in costs are possible, particularly on patterned goods such as stripes, plaids, and fancy weaves. This *modern method* of replacing warps has enabled many mills, both large and small, to meet the ever-increasing demands for a greater variety of patterns. *Your Barber-Colman representative is qualified to advise you on possibilities in your mill.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U.S.A. MANCHESTER, ENGLAND MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Ralston & Company Forbes Street, Fort Bombay, India	J. Rahaie Isabella Catolica 45 513 Apartado 7148 Mexico D.F. Mexico	Industria e Comercio de Maquinas S. A. Avenida Rio Branco No 50, Rooms 1201 3 "P. O. Box No. 63 Rio de Janeiro, Brazil	Do-Ye Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-machi, 3-chome, Higashi-ku Osaka, Japan	Associated Agencies (Mcr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (Mcr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

MORE THAN WATCHDOGS of Misalignment . . .

PRECISION GUIDERS

Like watchdogs — Mount Hope Precision Guiders instantly detect misalignments — and automatically correct these deflections, control lateral movement of the cloth.

As material begins to move out of alignment, it is "sensed" by a grooved and fluted selvage wheel which automatically readjusts the angle of a pair of nip rolls on each selvage. This ever-changing angle compensation applies just the right pull to keep the finest fabrics or the sturdiest materials in alignment.

For more information write to:

MOUNT HOPE MACHINERY COMPANY

50 Fifth Street, Taunton, Mass.
Plants at Taunton, Mass. and Charlotte, N.C.

CIRCLE 259 ON READER SERVICE CARD

When You Change Your Address . . .

It will help us to keep your copies of TEXTILE WORLD coming to you each month if you will promptly advise us of any change of address.

Circulation Manager
TEXTILE WORLD,
330 West 42nd St., New York 36, N. Y.

Please change the address of my Textile World subscription.

Name .....

Old Address .....

New Address .....

New Company Connection .....

.....

New Title or Position .....

TEXTILE WORLD

To get items you want offered in the advertisements in this issue, just circle numbers on Reader-Service Card next to the back cover. If all bulletins listed under one number are not required, please write on card the name of bulletin desired.

Advertisers' Literature

A350—Static Eliminator. Bulletin 79 available on request. The Portland Co.

A351—Rotary Union. Bulletins 700 and 800 available on request. Perfecting Service Co.

A352—Rotary Pressure Joints. Catalog J-2002 describes joints for all needs. The Johnson Corp.

A353—Water Treatment. Complete specifications available on request. Permutit Div.

A354—Activated Hydrogen Peroxide. Technical bulletin on request. Solvay Process Div.

A355—Air Conditioning. Bulletin 4A (Humiducts) and Bulletin 27A (Easy-Flo Filters) available on request. The Bahnson Co.

A356—Creel Arms. Catalog available. Edward J. McBride Co.

A357—Textile Chemicals. Catalog on chemicals for every processing need. Jacques Wolf & Co.

A358—Valves. New catalog on stainless-steel valves available on request. Jenkins Bros.

A359—Twister. Descriptive folder on twister for heavy and coarse yarns. Whitin Machine Works.

A360—"AC" Catalysts. Complete technical data on "AC" Catalysts on request. Plastics Div., Monsanto Chemical Co.

A361—Loom Mounts. Free sample and book on mounts obtained on request. The Felters Co.

A362—Lubricants. Technical bulletin on spindle oils available on request. Shell Oil Co.

A363—Lint-Collecting System. Bulletins X56 and X96 describing system available on request. Parks-Cramer Co.

A364—Pressure Regulators. Descriptive literature available on request. C. A. Norgren Co.

A365—Corrosion Preventative. Bulletin 410-12-7 describing Hagafilm available on request. Hagan Chemicals & Controls, Inc.

A366—Textile Chemicals. Following data sheets available on request: Sodium sulfhydrate, Sodium sulfide, Caustic Soda Buyer's Guide, Trichlorethylene. Hooker Chemical Corp.

A367—Starch. The following informative technical articles on request: A-Size Preparation in Textile Mills; B-Size Foaming-Its Cause and Cure; C-Acidity and Alkalinity-Significance of pH; D-New Improvements in Slashing. Hubinger Co.

A368—Silent Chain Drives. Book 2425 on request. Link-Belt Co.

A369—Valve Seat Rings. Informative, colorful brochure available on request. The Fairbanks Co.

A370—Motor Burnout Protector. Bulletin SP-25 available on request. Texas Instruments Incorporated, Metals & Controls Div.

A371—Bearings. Following complete data books available: Roller Bearing Bolsters; PK series Pendulum Weighting Arm; New Draftrite Roller Bearing Top; "SR" Tension Pulleys. SKF Industries.

A372—Belts. Catalog available on request. Extremultus, Inc.

A373—Power Transmission. Following bulletins are available: Bulletin 2100, Belt Drives: Bulletin 1100, "VPS" Variable-Speed Drives; Bulletin 8102 and 4101, "MCS" Motion Controls; Bulletin 5103, Sure-Flex Coupling. T. B. Woods Sons Co.

A374—Creels. Booklet describing advantages available on request. Kidde Textile Machinery Corp.

A375—Textile Testing Ovens. Complete information in Bulletin 203-7CR. Despatch Oven Co.

A376—Factors. Booklet "4 Ways to Make Your Business Grow", available on request. Textile Banking Co.

ALWAYS UNIFORM

Experienced mill men know that Victor's uniformity, year after year, can be relied upon for better penetration, stronger warps, greater smoothness.

When slashing problems do come up, they also know that Keever technicians have the experience to work with you in solving them. Let them prove it.

A KEESTAR PRODUCT

TEXTILE SALES DIVISION
118 South Pleasantburg Drive
Greenville, South Carolina

THE KEEVER STARCH COMPANY

GENERAL OFFICES COLUMBUS 15, OHIO

CIRCLE 169 ON READER SERVICE CARD 169

McGRAW-HILL MAILING LISTS WILL HELP YOU

- Merchandise your advertising
- Conduct Surveys
- Get leads for your salesmen
- Get inquiries about your product or service
- Pin-point geographical or functional groups
- Sell Direct
- Build up weak territories
- Aid Dealer Relations

Direct Mail is a necessary supplement to a well rounded Business Paper Advertising program.

600,00 actual names of the top buying influences in all the fields covered by the McGraw-Hill publications make up our 150 mailing lists. These lists are built and maintained primarily for our own use, but they are available to you for Direct Mail purposes. Pick out a list of YOUR prospect from our Industrial Direct Mail Catalogue.

More and more, progressive companies are using Industrial Direct Mail regularly as an advertising medium. They effectively allocate a portion of their concentrate on the best business publication.

For complete, detailed information about our service, fill in the coupon or write for your copy of our free Business and Industrial Direct Mail catalogue.

Direct Mail Division,
McGraw-Hill Publishing Co., Inc.
330 West 42nd St., N. Y. 36, N. Y.

Please forward my free copy of the McGraw-Hill "Industrial Direct Mail Catalogue."

Name_____

Company_____

Address_____

City_____ State_____

The Man Who Rises Fastest?

He's the man with fresh ideas!

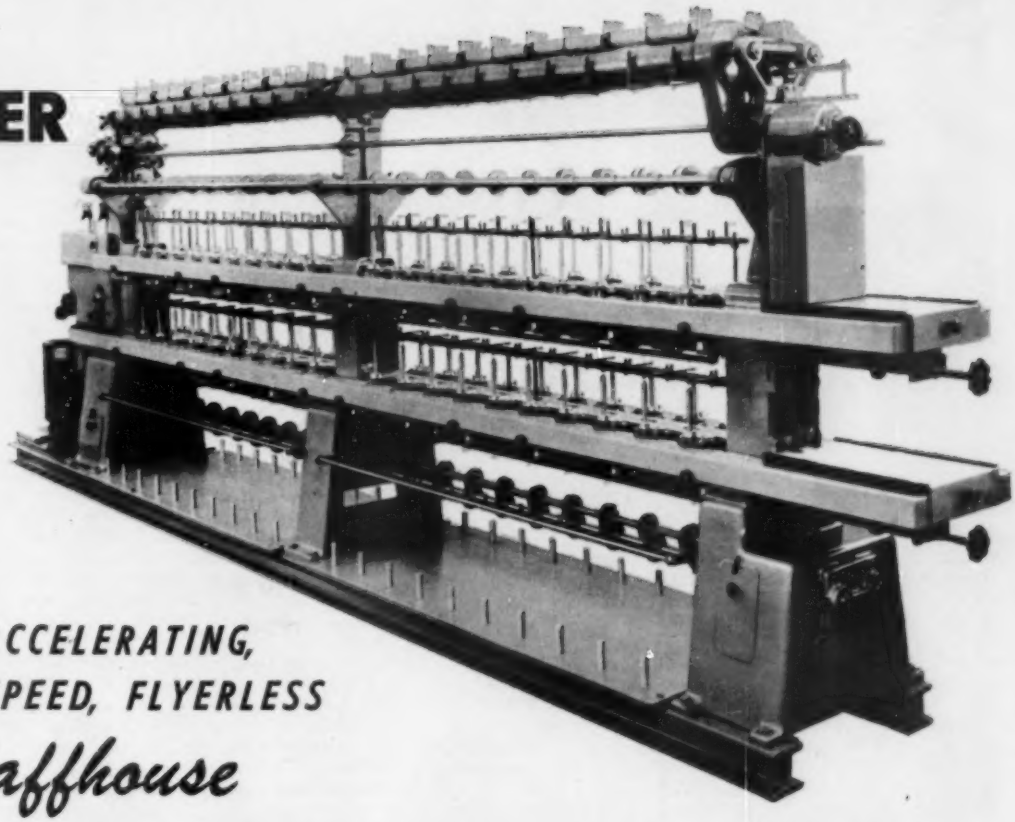
Where do you get your ideas? Dream 'em up over a fishing pole? Probably not. If you're like most managers, you probably depend on the printed word to get the creative ideas flowing. That means reading. Reading articles that are specifically tailored to your job interests and problems. That's the kind of article that makes TEXTILE WORLD the standout publication for mill managers everywhere. And that's the kind of article that can help you solve your day-to-day problems. For examples, take two recent TEXTILE WORLD articles:

- **Preventive Maintenance– Why You Need It, What It Can Do**
- **Key Facts You Should Know About Todays Traveling Cleaners**

These two articles are typical of the kind of solid, technically savvy material you'll always find in TEXTILE WORLD. And, if you missed either one of them, why not send for a reprint? The Preventive Maintenance article costs only 35¢, the Traveling Cleaners article only 50¢.

Write:
Reader-Service Department
TEXTILE WORLD
330 West 42nd Street
New York 36, New York

FROM
REINER



A
FAST ACCELERATING,
HIGH-SPEED, FLYERLESS
Schaffhouse

RUBBER THREAD COVERING MACHINE

Featuring 40 and 60 spindle units, the standard SUMA model permits fast, efficient covering of fine and finest rubber threads for all elastic weaving and knitting applications, such as BATHING SUITS — FOUNDATION GARMENTS — SURGICAL STOCKINGS — ORTHOPEDIC FABRICS — WELT TOPS — RASCHEL GOODS — RIBBONS, etc.

Built by Schaffhouse in Switzerland — known for over 80 years as designers and fabricators of precision textile machines — the "Suma" model PERMITS INSTANT STOPPING OF EACH INDIVIDUAL SPINDLE BY SIMPLY PUSHING IT CLEAR OF THE DRIVING BELT — WITHOUT TOUCHING ANY MOVING PARTS OF MACHINE — OR NECESSITATING THE USE OF ANY SPECIAL TOOLS. LONG SPINDLE LIFE.

OTHER FEATURES:

- Bare rubber thread is fed from King cones or ribbons to positively driven split feed wheels.
- Yarn breakage, even at highest speeds, is almost eliminated by flyerless covering process.
- Elongation is controlled by speed variator. A speed indicator facilitates the control of elongation.
- Speed adjustments made steplessly — including variations in take-up speeds.
- Chrome-nickel steel spindles — shafts rotating on inner race of precision ball bearings.
- Variable speed 11½ or 16 HP motor (for 40 or 60 spindle units respectively) provides main drive — servo motor permits various working speeds.
- Upper spindle bank speed range: 4,000 to 16,000 rpm. Lower spindle bank range: 8,000 to 16,000 rpm. Speed Indicator for each spindle bank.
- Each spindle bank is driven by a mill-tested, endless, wear-resistant nylon belt.

Write today for complete information.

ROBERT REINER, INCORPORATED

550-564 GREGORY AVENUE

Telephone: UNion 7-0502 — From New York City call LOngacre 4-6882

WEEHAWKEN (Only 10 minutes from Times Square by direct bus) **NEW JERSEY**

AN HONORED NAME IN TEXTILE MACHINES SINCE 1903

TEXTILE WORLD . . . News About Suppliers

FRANCIS A. KRAFT (left) has been named New England manager for Becco Chemical Div., Food Machinery & Chemical Corp., and will make his headquarters in Framingham, Mass. RAY W. THOMPSON (center) has been appointed general sales manager, Marketing Div., Square D Co. L. ROBERT STRONG (right) has been named technical director at Diamond Crystal Salt Co.

ALLIED CHEMICAL CORP., New York, N. Y.—Has appointed R. F. Bowman and O. W. Svenson, Jr., as sales managers for basic industrial chemicals in the general-chemical division. Plans are underway for the expansion of Solvay Process Div.'s mercury cell chlorine-caustic soda plant at Brunswick, Ga. . . . **AMERICAN CYANIMID CO., FIBERS DIV.**, New York, N. Y.—Has transferred A. M. Purut, field technical-service representative in dyeing and finishing, to the company's Charlotte office. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has promoted R. E. Reynolds to general sales manager of the film division. . . . **BRANCH MOTOR EXPRESS CO.**, Brooklyn, N. Y.—Has appointed A. D. Schiavino as manager of the Baltimore terminal.

CELANESE CORP. OF AMERICA, CELANESE MEXICANA, S. A., Toluca, Mexico—Will produce nylon tire cord starting in the first quarter of 1961 with facilities for a capacity of 2,000 tons annually. The company has made arrangements with Firestone Tire & Rubber Co. for the process, equipment, design, and continuing technical assistance. . . . **CHEMSTRAND CORP.**, Decatur, Ala.—Has named Richard G. Mansfield as merchandising specialist. . . . **DOW CHEMICAL CO.**, New York, N. Y.—Has announced the retirement of Ennis P. Whitely, vice president of Dobeckmun Co., a division of Dow. The company also reports that its Dow Badische Chemical Co. will construct a new plant at Freeport, Tex. Scheduled completion: early in 1961. Products of the plant, n-butanol and iso-butanol, will be sold through the Dow Chemical Co.

EASTMAN CHEMICAL PRODUCTS, INC., DIVISION OF EASTMAN KODAK CO., New York, N. Y.—Has opened an office in Buffalo, N. Y., located in the Snyder Square Building. The office will be under the supervision of George O. Trabue who will represent the company in the sale of its industrial and speciality chemicals in western New York, western Pennsylvania, and southern Ontario areas. Frank W. Abernathy has been named district sales manager and will direct sales of industrial and speciality chemicals in the New England area from the division's office in Framingham, Mass. . . . **EMERY INDUSTRIES, INC.**, Cincinnati, Ohio—Has appointed Joseph J. Raispis and Jack W. Little to the Development and Service Department in connection with the expansion of the Technical Service Section.

FIFE MANUFACTURING CO., INC., Oklahoma City, Okla.—Has transferred D. D. Paulsen from South Bend, Ind., to Glen Ellyn, Ill., to cover Chicago and the western part of the Midwest territory. R. L. Fife has moved from the Oklahoma City territory to Dayton, Ohio, to cover western Ohio, Indiana, Michigan, and parts of the bordering states.

. . . *Turn to page* 174

Now—EASTERN'S Flying Freighters offer

OVERNIGHT DELIVERY

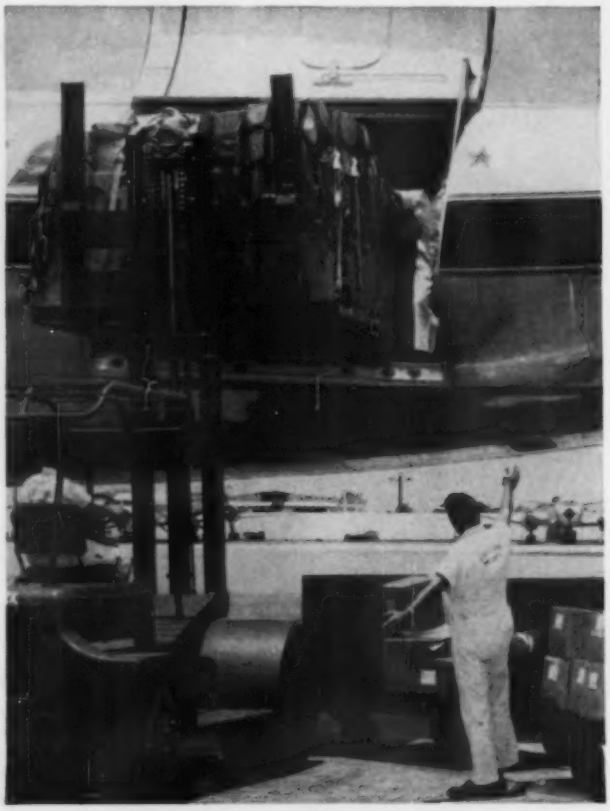
New York—Miami—San Juan
New York—Atlanta—New Orleans—Mobile—Houston
Chicago—Atlanta—Miami—San Juan

- Reserved space on every Freighter flight.
- Pressurized and temperature-controlled.
- Flights daily except Saturday and Sunday nights.
- Pickup and delivery service available.

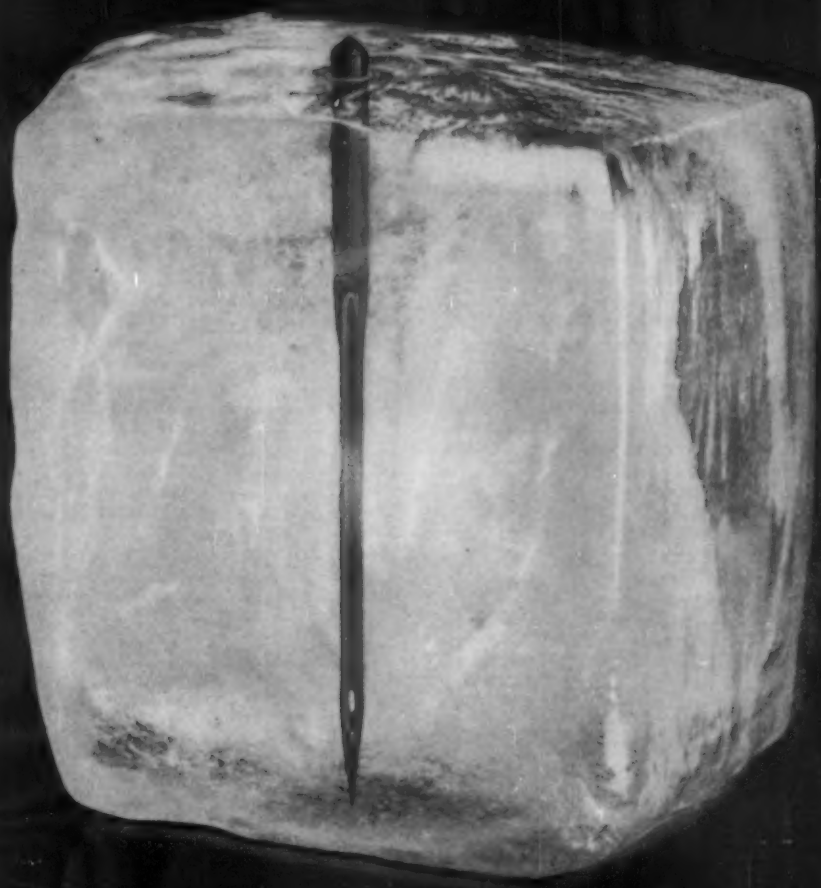
In addition, Eastern offers freight space on over 400 daily passenger flights—including DC 8-B Jets and Prop-Jet Electras—to 128 cities in the United States, Canada, Bermuda, Puerto Rico and Mexico.

For Information and Freight Reservations, call your Freight Forwarder, Cargo Agent or Eastern Air Lines.

EASTERN AIR LINES

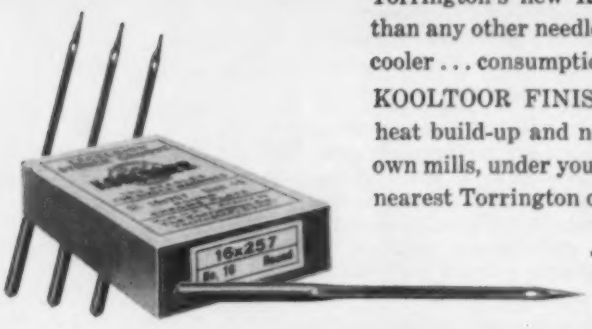


Biggest Needle News in Years . . . from **TORRINGTON**



KOOLTORR FINISH NEEDLES

Run 100° Cooler, Cut Needle Usage 80-85%



Torrington's new KOOLTORR FINISH needles perform far better than any other needles available . . . needles have run as much as 100°F cooler . . . consumption has been reduced as much as 80-85%.

KOOLTOOR FINISH provides the best answer yet to problems of heat build-up and needle breakage. Test it without delay . . . in your own mills, under your own conditions, on any fabric. Call or write your nearest Torrington office . . . today!

THE TORRINGTON COMPANY

Established 1866

Torrington, Conn., U.S.A. • Bedford, P.Q., Canada
Coventry, England • Genoa, Italy

Branches to serve you are located in: New York • Philadelphia • Chicago • Boston • Greensboro, N.C. • Atlanta • St. Louis • Toronto, Ontario, Canada London, England • Zurich, Switzerland • Pacific Coast Representative: E. G. Paules, 1762 West Vernon Avenue, Los Angeles 62, California

TORRINGTON MEETS EVERY NEEDLE NEED: SEWING · KNITTING · TUFTING · FELTING

RICHARD A. RILEY (left) has ben named president of Firestone Rubber & Latex Products Co., division of Firestone Tire & Rubber Co., Fall River, Mass. HAROLD L. SAGER (center) has been appointed assistant manager of the New England district sales office of Dyes & Chemicals Div., E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del. BRUCE F. ROBERTS (right) has been appointed assistant director of merchandising, Fibers Div., Eastman Chemical Products, Inc., New York, N. Y.

Norman Lippucci will open the new Cleveland, Ohio, office. . . . **GATES RUBBER CO.,** Denver, Colo.—Has appointed D. F. Pfeiffer sales manager for Austria, Switzerland, and the European Common Market. A native of Zug, Switzerland, he will make his headquarters there. . . . **GENERAL ANILINE & FILM CORP.,** New York, N. Y.—Has appointed William Hansot assistant to the president. In this new capacity he will be involved in the formulation of coordinated corporate plans for improving international operations. . . . **GOODYEAR TIRE & RUBBER CO., INC., INDUSTRIAL PRODUCTS DIV.,** Akron, Ohio—Has named W. A. Cooper to the newly created post of manager of distributor sales.

HERBERT PRODUCTS, INC., Westbury, N. Y.—Has named O. L. Smith sales representative for southern Jersey, Pennsylvania, Delaware, and Maryland. . . . **HERCULES POWDER CO., NAVAL STORES DEPT.,** Wilmington, Del.—Has appointed Dr. Eugene D. Crittenden, Jr., senior technical sales-service representative operating out of the department's New York district sales office. . . . **HOOKER CHEMICAL CORP.,** Niagara Falls, N. Y.—Has elected F. L. Bryant executive vice president and a director of the corporation. Also elected directors were T. F. Willers, a Hooker vice president, and W. R. Gullander, executive vice president and a director of General Dynamics Corp. . . . **JAMES HUNTER, INC.,** Greenville, S. C.—Has acquired the patents and rights to cotton opening and cleaning equipment made by the Textile Machinery Div. of the Cen-Tennial Cotton Gin Co., Columbus, Ga. . . . **IDEAL MACHINE SHOPS, INC.,** Bessemer City, N. C.—Has named F. E. Bulger sales representative in spindle and flyer service, covering Georgia and Alabama.

INDUSTRIAL RAYON CORP., New York, N. Y.—Has elected J. W. Brownley to the position of vice president in charge of manufacturing. . . . **INTERCHEMICAL CORP., COLOR & CHEMICALS DIV.,** Hawthorne, N. J.—Has bought the businesses and assets of Vansul Corporation & Colors of Englewood, N. J. . . . **E. H. JACOBS MFG. CO.,** Charlotte, N. C.—Has begun operations in the manufacture of all Jacobs loom parts and supplies. The new company is the result of the consolidation of E. H. Jacobs Northern Div. and E. H. Jacobs Southern Div. of the Bullard Clark Co. . . . **JOHNSON MOTOR LINES, INC.,** Charlotte, N. C.—Has announced the approval of the company's purchase of Emmott-Valley Transportation Co. of Uxbridge, Mass., by the Interstate Commerce Commission. . . . **KOPPERS CO., INC.,** Pittsburgh, Pa.—Has announced the appointment of John W. Pool, Jr. as vice president of the plastics division. . . . **LINK-BELT CO.,** Chicago, Ill.—Has announced the appointment of T. Webster Matchett as general manager of the Pershing Road plant in Chicago. He is succeeded as manager of the Caldwell plant by George Ramsden.

EDWARD J. McBRIDE CO., INC., Philadelphia, Pa.—Has named E. L. Herbert sales engineer for Middle-Atlantic and New England states. . . . **MORETEX CHEMICAL**

Success needs no introduction . . . Lockwood Greene offers the cotton mill owner 127 years of cotton mill design. Whether your needs are the construction of a new plant, the renovation of present properties, or the enlarging of existing facilities, call Lockwood Greene for a fully integrated service—complete architectural, structural, mechanical and electrical design staffs in all offices.

OVER 500 COTTON MILL INSTALLATIONS to the good

Write for literature

LOCKWOOD GREENE
ENGINEERS • ARCHITECTS

316 Stuart St. BOSTON 16, MASS. | 41 East 42nd St. NEW YORK 17, N. Y. | Montgomery Bldg. SPARTANBURG, S. C.

Over a Century of Industrial Plant Design Experience

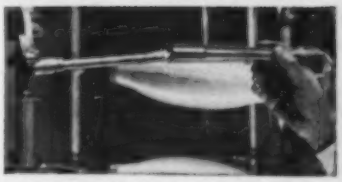
A KIDDE CREEL can handle any package...

present-day or future development!

Talk about versatility! Kidde creels are designed to handle any package—any size, any shape—simply by using adapters like those in the pictures at right. Clamp type construction makes it easy to change vertical or horizontal spacing to accommodate different sizes and shapes. And Kidde will design holders and adapters for present creels to take any future packages developed!

Kidde works with you to build the creel your operation requires—horizontal or vertical, magazine or non-magazine—any size from 40 to 4,000 running ends. And Kidde tension devices can handle the entire range of yarns—natural or synthetic, filament or spun.

Why not send for our booklet describing all the advantages of Kidde creels. Just write or phone.



TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

CIRCLE 175 ON READER SERVICE CARD

TEXTILE *testing ovens*

- **Separate Rack Doors In Full-Opening Door**
- **Electric Heat, 6KW max.**
- **450° F. Automatic Control**
- **Only $820**

This Despatch textile-testing oven has been enthusiastically accepted by manufacturers across the nation.

Typical uses include testing resin and ink drying on cloth samples stretched over pin frame racks.

Heated evenly with electricity, it is provided with an indicating automatic temperature controller and individual rack doors to minimize heat loss. Rack doors are part of the single, full-opening door.

The four rack model is standard, but Despatch will provide larger units upon special order. Models with six to ten racks have been in service for many years.

For complete information, send today for free bulletin 203-7CR.

DESPATCH OVEN CO.

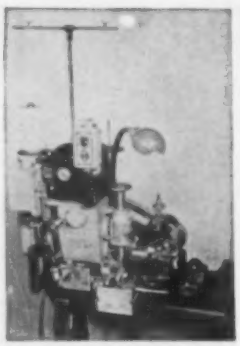
DESPATCH OVEN CO. 619 S.E. 8th St., Minneapolis 14, Minn.

CIRCLE 260 ON READER SERVICE CARD

NEW MODEL #11-B.V. #25

- **Fine Stitch on Selvage**
- **Coarse Stitch in Center**

The fine stitch on the selvage is used to prevent the selvage from rolling back at the seam of the goods; with the coaser stitch in the body of the cloth so as not to slow down the time in stitching the seam.



This combination can make several different types of stitching, such as:

5 stitches in the center and 15 stitches on the selvage
5 stitches in the center and 10 stitches on the selvage
7 stitches in the center and 21 stitches on the selvage
7 stitches in the center and 14 stitches on the selvage

We can give you two or three times as many stiches per inch on the selvage as in the body of the cloth.

DINSMORE MANUFACTURING CO.
Box 267 Salem, Mass.

News About Suppliers . . . *Begins on page* 172

PRODUCTS, INC., Spartanburg, S. C.—Has acquired license from W. R. Grace & Co. to produce and market two hydrazinium compounds for use in textile wet processing. They will be marketed under the trade names "Aquazine-100" and "Aquazine-88" . . . **NATIONAL STARCH & CHEMICAL CORP.,** New York, N. Y.—Has opened a new textile service laboratory at Atlanta, Ga., the headquarters of the Southeastern division. Howard M. Smith is in charge of the new laboratory and will direct technical-service activities. . . . **NOPCO CHEMICAL CO.,** Newark, N. J.—Has installed new laboratories for its Industrial and Fine Chemicals Div. in Harrison, N. J. . . . **OLIN MATHIESON CHEMICAL CORP.,** New York, N. Y.—Is building a $13-million chlorine and caustic-soda plant at Charleston, Tenn. Production is scheduled for the end of 1961.

MORNING-STAR PAISLEY, INC., New York, N. Y., has started production at this new plant, which will have a capacity of 12-million pounds of liquid adhesives. The plant, situated in Atlanta, Ga., will also serve as a warehousing and service facility for products including those products for the textile industry.

PARAMOUNT TEXTILE MACHINERY CO., Chicago, Ill.—Has acquired the Cook six-drawer tray dryer from Cook Engineering & Electronics Co., Concord, N. H. . . . **RIEGEL PAPER CORP.,** New York, N. Y.—Has completed the merger of Fairtex Corp. and Branson Yarn Co. into Riegel Paper Corp. . . . **A. E. STALEY MFG. CO.,** Decatur, Ill.—Has named E. K. Olson chief chemist of the quality-control laboratory. . . . **SCOTT & WILLIAMS, INC.,** Laconia, N. H.—Has announced that Scott & Williams S. A., Bruges, Belgium, will serve as headquarters for the production, and the sales and service of circular-knitting machines and replacement parts for the Common European Market, as well as for England, Austria, Spain, and the Scandinavian countries. . . . **SONOCO PRODUCTS CO.,** Hartsville, S. C.—Has acquired the equipment and facilities of Dixie Paper Tube Co. of Richmond, Va.

SOUTHERN MACHINERY CO., Greenville, S. C.—Has appointed H. R. Kennedy director of research and product development. . . . **JAMES TALCOTT, INC.,** New York, N. Y.—Has elected J. J. Mohl vice president in charge of the New England region. His office will be located in Boston. . . . **TURBO MACHINE CO.,** Lansdale, Pa.—Announced the appointment of F. J. Dougherty as coordinator of engineering. . . . **UNITED STATES TESTING CO.,** Hoboken, N. J.—Has announced that Raphael Izzo has joined the textile division. . . . **UNION CARBIDE CORP.,** New York, N. Y.—Has appointed H. V. Caton sales representative for ULOK cube air filters in North and South Carolina for the Union Carbide Development Co. T. H. Mariner has been appointed southern regional sales representative of crystal products for Linde Co., a division of Union Carbide Corp.

VALCHEM, DIVISION OF UNITED MERCHANTS & MANUFACTURERS, INC., New York, N. Y.—Has begun the production of Acrival A-37, acrylic-based polymer emulsion, at its Langley, S. C. plant. . . . **WHITE BEARING CO.,** Charlotte, N. C.—Has announced that Gus Bryson has joined the company in engineering sales. . . . **WHITIN MACHINE WORKS,** Whitinsville, Mass.—Has named N. F. Garrett, vice president and general manager of the Whitinsville Div., executive vice president of the corporation. E. K. Swift, Jr. has been named vice president in charge of research and development.

TEXTILE WORLD. . . News About Men

George Asnip has been elected chairman of the executive committee of the board of directors of the National Association of Wool Manufacturers. He is vice president and general manager of the worsted division of Excelsior Mills, Inc., Pendleton, S. C.

J. L. Barnett has been elected president of the Combed Yarn Spinners Association. He is secretary and treasurer of South Fork Mfg. Co., Belmont, N. C.

Robert E. Boyaval, general manager and treasurer, has resigned after 28-years service with Masurel Mills, Inc., Woonsocket, R. I.

Donald E. Button has been appointed plant manager of Troy Blanket Mills, Troy, N. H.

William Oscar Cate, after 41 years in textiles, is retiring as president of Burlington Cotton Co., Greenville, S. C. He will continue with the company in an advisory capacity and will supervise Burlington's cotton purchases in the El Paso, Tex., area.

Wallace P. Dodson has become manager of Fayette Mfg. Co., Fayette, Ala.

Milton K. Emerson has been named executive vice president and general manager, Modern Central Dyeing & Finishing Co., Paterson, N. J.

Murray Feldman has been named to head the newly established men's-wear selling division of Fair-Tex Mills, Inc., New York, N. Y.

Ernest Folger, Jr. has been named divisional controller of the cotton division, J. P. Stevens & Co., Inc. He will assist in coordinating all accounting activities for the 22 plants in the cotton division and will maintain his office in Greenville, S. C.

CHARLES F. SCHROEDER has been appointed general sales manager of Curon Div., Reeves Brothers, Inc., New York, N. Y.

Paul C. Franklin has been named product manager, Gaffney Mfg. Co., Gaffney, S. C.

Rodney Graham has been named president of Printed Fabrics Corp., Carrollton, Ga., division of Meade & Montague, New York, N. Y.

Joseph H. Hamilton has resigned as president of Burlington Throwing Co., division of Burlington Industries, Inc. He has been named president and general manager of Baldwin Processing Co., Milledgeville, Ga.

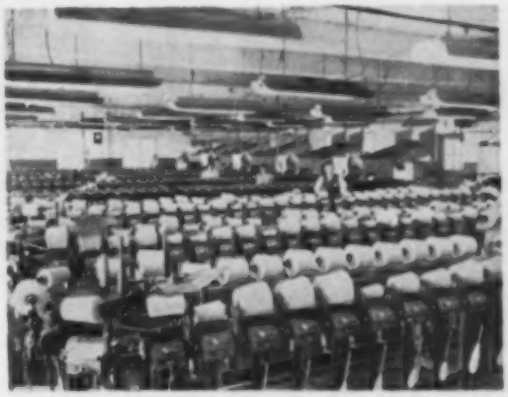
Carl O. Hocke has been appointed sales representative, covering the southern

FRANK R. ROCHOW (left) and CHARLES L. JORDAN (right) have been appointed plant manager and assistant plant manager respectively of the new Chester, S. C., industrial-textile plant, specializing in narrow-fabric textiles of Schlegel Mfg. Co., Rochester, N. Y.

ABBOTT MACHINE CO., Inc.

WILTON, NEW HAMPSHIRE

SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.



AUTOMATIC CONE OR TUBE WINDERS—for winding all types of spun yarns on cones or tubes for Warping, Dyeing, Twisting, Quilling, Knitting or Sales Packages.

SPECIAL WINDING UNITS FOR KNITTING CONES—include a new slub catcher and a new waxing attachment, which uses standard size commercial wax disks.

LARGE PACKAGES—can be wound up to 11½ inches in diameter for use on shuttleless looms and looms that require a cone supply.

MODEL I AUTOMATIC QUILLER—for coarse count cotton, worsted, wool and other spun yarns, delivers full loom bobbins automatically into boxes, onto pinboards, on wide belt conveyor for inspection of bobbins, or into specially made magazines for automatic loom feeder.

MODEL II HIGH SPEED AUTOMATIC QUILLER (10,000 R.P.M.)—for winding fine count cotton and synthetic yarns of either spun or filament construction.

Also delivers full looom bobbins automatically into boxes, onto pinboards or wide belt conveyor for inspection of bobbins.

Under some conditions one operator can run two or three machines and produce upwards of 2500 full loom bobbins per hour.

ABBOTT FULLY AUTOMATIC RADIAL QUILLER, MODEL II—especially designed for flexibility, is very versatile and particularly well adapted for winding numerous small lots of filling.

Winds coarse or fine count cotton, worsted, wool, rubber and various synthetic yarns, either spun or filament.

Automatic delivery of full loom bobbins onto pinboards, wide belt conveyor for inspection of bobbins, into baskets or other type containers.

Automatic delivery of bobbins can also be supplied whereby full loom bobbins from the individual cones and spindles are delivered into separate containers, which is highly desirable for loom finish yarns and the like.

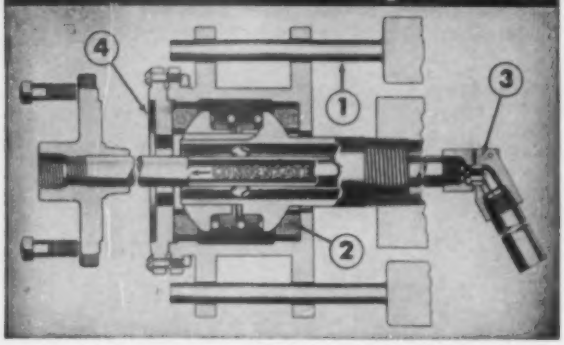
The Radial Quiller can also be equipped with measured yardage attachments to give accurate, uniform bobbin yardage, as required for two-shuttle looms.

A wide range of spindle speeds for approximately 1000 R.P.M. to 10,000 R.P.M. is obtainable.

One operator can run several machines and thus produce up to 2000 loom bobbins, or more, per hour.

CIRCLE 177 ON READER SERVICE CARD

For service on Dry Cans and 30" Slasher Cylinders



Type LJSP with Syphon Elbow

1. Support rods carry all the real weight. Sealing assembly "floats" freely inside. 2. Seals without packing—needs no lubrication or adjusting. 3. Syphon elbow replaces clumsy curved syphon pipe with two straight pipes, passes right through joint. 4. Assembly plate holds parts in place when head is removed.

Johnson ROTARY PRESSURE Joints – First in the Textile Industry

Write for Catalog J-2002

Shows Johnson Joints for all needs, on dry cans, print cans, calenders, compressive shrinkage ranges, 5' and 7' cotton slashers, etc.

THE JOHNSON CORPORATION
814 Wood St., Three Rivers, Mich.

CIRCLE 261 ON READER SERVICE CARD

to make modernizing dollars mean the most, lay smart, new floors of—

Northern Hard MAPLE

the finest floor that grows

Most modern touch you can give to a building! These bright, smooth, enduring floors of delicately-grained MFMA Northern Hard Maple bring any space up-to-date like magic. A grade for every budget—*all good grades!* Use MFMA Maple or Birch. They're *guaranteed*. Write—

MAPLE FLOORING MANUFACTURERS ASSOCIATION
553 Pure Oil Bldg., 35 E. Wacker Drive
Chicago 1, Illinois

News About Men . . .

SHELDON JOBLIN has been appointed president of the Burlington Shirting Co., a division of Burlington Industries, Inc., New York, N. Y.

territory with offices in the Furniture Exhibition Building, High Point, N. C., for Collins & Aikman Co., New York, N. Y.

Jordan Kaufman has been appointed merchandise head of Signatures Fabrics Synthetics, a new department of the Signature Fabrics Div. of M. Lowenstein & Sons, Inc., New York, N. Y.

Philip H. Kirshen has been elected a director of United Merchants & Manufacturers, Inc., New York, N. Y.

M. J. Lernihan has been named head of research, production control, and new products for the Milium Div., Deering Milliken, Inc., New York, N. Y.

J. Joseph Lyons has been appointed manager of Pacific Columbia Mills, division of M. Lowenstein & Sons, Inc., New York, N. Y.

G. L. Mantell has been elected vice president in charge of the men's cotton-shirting department of Reigel Textile Sales Co., division of Riegel Textile Corp., New York, N. Y.

Paul K. McKenney, Jr., vice president and comptroller of Swift Mfg. Co., Columbus, Ga., has been elected president of the Georgia Textile Manufacturers Association, Inc., Atlanta, Ga.

Richard L. Meader has been named general manager of Carleton Woolen Mills, Winthrop, Me.

Sidney Merians has been named manager of sales, including merchandising, styling, and fabrication, for Bachmann Uxbridge Worsted Co., Uxbridge, Mass.

Calvin A. Michaels has been promoted to area-personnel executive for the transportation division of Burlington Industries, Inc., New York, N. Y.

Robert G. Mitchell has been appointed director of operations for the Wool "O" Co., Philadelphia, Pa.

Harry Moore has joined Burlington Finishing Co., division of Burlington Industries, Inc., New York, N. Y. as technical sales coordinator.

Alonzo Murphy has been promoted to overseer of production, screen printing, and shipping at the Unity plant, Callaway Mills Co., La Grange, Ga.

Douglas T. Noakes has been appointed comptroller of the Lockhart plant of Monarch Mills, Union, S. C.

Irving B. Peters has been appointed president of Catlin Parish Co., division of Burlington Industries, Inc., New York, N. Y.

J. Manley Phillips has been named superintendent of the new Sloan plant of Green-

E. M. PROCTOR (left) has been named assistant director of production and ADDISON M. SMITH (right) has been appointed assistant to the president, with offices in Minneapolis, Minn., for Bemis Brothers Bag Co., St. Louis, Mo.

. . . Begins on page 177

wood Mills, Greenwood, S. C.

J. C. Plowden has been named secretary of Woodside Mills, Inc., Greenville, S. C.

J. W. Reid has been assigned to the southern-district sales office of the Textile Div. of United States Rubber Co., New York, N. Y.

Kenneth Richards has been named vice president in charge of merchandising for Firth Carpet Co., Firthcliffe, N. Y.

Geoffrey D. Roberts has been appointed superintendent of the Proximity Print Works Plant for Cone Mills Corp., Greensboro, N. C.

James S. Rotan has been named vice president of Catlin Farish Co., division of Burlington Industries, Inc., Greensboro, N. C.

Dorsey Sheppard has been named plant superintendent of Abbeville Mills, Deering Milliken & Co. Inc., New York, N. Y.

Jacques E. Staelen has been appointed manager of Masurel Mills, Inc., Woonsocket, R. I.

Joseph H. Sutherland has been elected chairman of Kimberly-Stevens Corp., New York, N. Y.

George H. Thomas, Jr. has been appointed sales representative for the towel and scatter-rug division of Callaway Mills Co., La Grange, Ga.

Jack Udis, vice president, has been named head of the gray-goods department of Reeves Brothers, Inc., New York, N. Y.

W. K. Waits, assistant superintendent, has retired after 27 years with Joanna Cotton Mills Co., Joanna, S. C.

Abe Waters has been appointed merchandiser of man-made-fiber fabrics for the men's- and boy's-wear trades for M. Lowenstein & Sons, Inc., New York, N. Y.

T. V. Widyn, Jr., has been appointed sales representative for Troyfelt synthetic products in the nonwoven-products division of Troy Blanket Mills, Troy, N. H.

John Woodhead has been named knitting manager of S & E Manufacturing Co., knit-fabric division of Comfy Manufacturing Co., Baltimore, Md.

OBITUARIES

Fifteen textile machinery men, on their way to the Southern Textile Exposition at Greenville, S. C., were killed when their plane crashed at Boston, Mass., last month. They were:

***Evans Bedigan,* Whitin Machine Works, Whitinsville, Mass.**
***M. E. Bottomley,* David Brown Co., Lawrence, Mass.**
***R. J. Douglas,* Dewey & Almy, Cambridge, Mass.**
***F. M. Fitzgerald,* Draper Corp., Canton, Mass.**
***A. B. Freeman, Jr.,* Samuel T. Freeman & Co., Phila., Pa.**
***R. E. Gardner,* Progressive Engineering, Inc., Rockland, Mass.**
***E. W. Harris,* Progressive Engineering, Inc., Rockland, Mass.**
***N. R. Hess,* Stowe & Woodward, Inc., Newton Upper Falls, Mass.**
***H. P. King,* American Safety Table Co., Inc., Mohnton, Pa.**
***W. H. Mordo,* Stowe & Woodward, Inc., Newton Upper Falls, Mass.**
***R. B. Newton,* Whitin Machine Works, Whitinsville, Mass.**
***R. E. Read,* Kendall Mills, Walpole, Mass.**
***Robert Scott,* Westinghouse Electric Corp., Pittsburgh, Pa.**
***K. F. Simpson, Jr.,* Arthur D. Little, Inc., Cambridge, Mass.**
***H. L. Thomas,* Whitin Machine Works, Whitinsville, Mass.**

Nathan R. Burg, 56, founder and partner, Triangle Knitting Mills, Philadelphia, Pa.

Leonard Sanford Chace, 81, one of the founders and former president of Shawmut Mills, Fall River, Mass.

Lutheran A. Elmore, 68, retired superintendent, Rhodhiss Div., Burlington Industries, Inc., Greensboro, N. C.

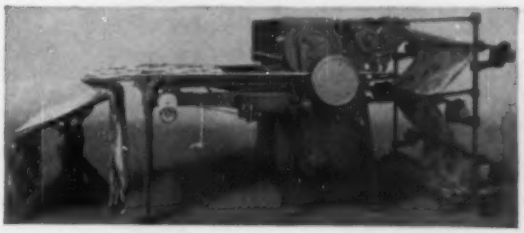
W. W. Forest, 73, president of Forrest Yarn Co., Lansdowne, Pa., and vice president of Angus Mills, Inc. Lansdowne, Pa.

Percy W. Noble, 55, production manager and treasurer, American Fabrics Co. Bridgeport, Conn.

Julius Sell, 75, retired superintendent, Eick Worsted Co., Philadelphia, Pa.

Meyer Weisman, 59, former partner, Wei-Sakak Knitting Mills, N. Y.

$6400 a year saved in waste alone . . .



by this entirely NEW method of cutting!

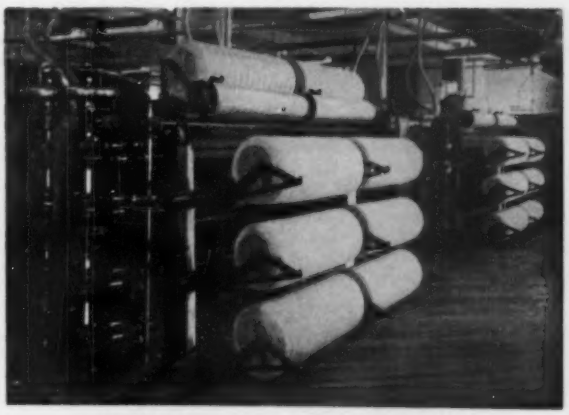
Want more details? Just write telling us what you cut.

charles **BECK MACHINE** corporation

SHEET CUTTERS
SLITTERS
SHEETER-PRINTER
CAN IMPRINTER
BOX LIDDER
TEAR-STRIPPER

50 church road, king of prussia, pennsylvania

CIRCLE 262 ON READER SERVICE CARD



DOUBLE RUB, FOUR BANK TAPE CONDENSER

Built in 48", 60", 72" widths for adaptation to all carding machines. Write for information.

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P.O. Box 25

CIRCLE 179 ON READER SERVICE CARD

cancer! where can you turn?

A MOTHER wants to know how to guard herself against cancer of the cervix. She turns to her physician and to the American Cancer Society for the answers to her questions.

A PHYSICIAN must keep up with the fast developing facts in cancer control. He turns to his journals and the American Cancer Society professional publications and films for this information.

A BUSINESSMAN wants to protect his employees. He turns to the American Cancer Society for life-saving pamphlets, films, danger signal posters, and speakers.

A SCIENTIST needs funds to support his research on leukemia. He turns to the American Cancer Society which invests millions annually in cancer research.

A CANCER PATIENT needs dressings and weekly transportation to a treatment center. She turns to the American Cancer Society, and is helped.

The American Cancer Society is many things to many people—and is made up of many people—two million volunteer physicians, businessmen, union leaders, nurses, scientists, housewives, dedicated to one goal: saving lives from cancer. Through the Society's nationwide research, education and service programs, they hold out a lifeline to everyone threatened by cancer.

You, too, can turn to the Society. Call your local Unit for more information on what it can do for you—and, incidentally, what you can do for it.

CANCER'S SEVEN DANGER SIGNALS

1. Unusual bleeding or discharge.
2. A lump or thickening in the breast or elsewhere.
3. A sore that does not heal.
4. Change in bowel or bladder habits.
5. Hoarseness or cough.
6. Indigestion or difficulty in swallowing.
7. Change in a wart or mole.

If your signal lasts longer than two weeks, go to your doctor to learn if it means cancer.

AMERICAN CANCER SOCIETY

LEGAL NOTICE

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960. (74 Stat. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION

Of Textile World, published monthly with 12th issue in mid-July at Albany, New York for October 1, 1960.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Published by McGraw-Hill Publishing Company, Inc., 330 West 42nd St., New York 36, N. Y.; Editor, Walter A. Stanbury, 330 West 42nd St., New York 36, N. Y.; Managing editor, Edward W. Ziegler, 330 West 42nd St., New York 36, N. Y.; Business manager, Thomas Macaluso, 330 West 42nd St., New York 36, N. Y.

2. The owner is McGraw-Hill Publishing Company, Inc., 330 West 42nd St., New York 36, N. Y. Stockholders holding 1% or more of stock are: Donald C. McGraw & Willard T. Chevalier, Trustees under Indenture of Trust m/b James H. McGraw, dated 1/14/21 as modified; Donald C. McGraw & Harold W. McGraw, Trustees under an Indenture of Trust m/b James H. McGraw, dated 7/1/37 as amended; Donald C. McGraw, Individually; Estate of Mildred W. McGraw, Donald C. McGraw and Catharine McGraw Rock, Executors; (all of 330 West 42nd Street, New York 36, N. Y.); Grace W. Mehren, 536 Arenas St., LaJolla, Calif; Affiliated Fund, Inc., 63 Wall St., New York, N. Y.; Genoy & Co., P. O. Box 491, Church St. Station, New York, N. Y.; Touchstone & Co., c/o Wellington Fund, Inc., Claymont, Delaware.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: 25,269.

McGRAW-HILL PUBLISHING COMPANY, INC.

By JOHN J. COOKE, Secretary.

Sworn to and subscribed before me this 15th day of September, 1960.

[SEAL] JANET A. HARTWICK.

(My commission expires March 30, 1961)

KNITTER MECHANIC WANTED

Man with pattern wheel experience on Supreme R.O.F. or similar machines. Good opportunity for a knitter-mechanic with fundamental knitting know-how, and initiative to develop in an uncrowded field. Old established firm on East Coast. Send complete resume. All replies will be answered and held in strict confidence.

Box 1016
1501 Broadway, N.Y.C.

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

POSITION VACANT

Wanted: Graduate textile engineer with quality control experience to head up quality control and inspection function in branch plant of nationally known manufacturer located in North Carolina. P-5261, Textile World.

Additional Employment Opportunity Advertising on page 186

Coming Next Month:

TEXTILE WORLD'S 1961 FIBER BLEND CHART

Complete, up-to-date information on newest, most effective blends, and typical fabrics made from them.

See it in — December TEXTILE WORLD

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT: BUSINESS: **"OPPORTUNITIES"** EQUIPMENT: USED OR RESALE

DISPLAYED	—RATES—	UNDISPLAYED
Individual Spaces with border rules for prominent display of advertisements.		$1.50 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.		**Positions Wanted** take one-half of above rate.
Employment Opportunities—$33.80 per inch, subject to Agency Commission.		**Box Numbers** in care of our New York, Chicago & San Francisco offices count as one additional line.
An advertising inch is measured ⅞" vertically on one column, 3 columns—30 inches—to a page.		**Discount of 10%** if full payment is made in advance for 4 consecutive insertions.

December Issue closes November 15th in N. Y.

SELLING OPPORTUNITY AVAILABLE

North Carolina Salesman Wanted—Commission selling—manufacturer wants additional representation in South. Dividing territory. Mainly weaving supplies offered. 30 years experience. SW-5114, Textile World.

POSITIONS WANTED

Textile engineer, age 33, dyeing and finishing experience, currently selling European machinery, desires new sales challenge. PW-5498, Textile World.

Supt: Dyeing and Finishing. Experience: Sweaters, Piece Goods, Hosiery, All Fibers, Fabrics and Blends. PW-5481, Textile World.

Rasch-l Superintendent Available, fully, qualified mechanic, specialized on multi bar lace, analysis, layout, drafting. PW-5480, Textile World.

Textile Graduate—34 years old. Now employed as asst. supt. in large diversified weaving plant. Want to locate in Mexico or South America as asst. supt., supt., or consultant. Expert in carding and spinning, cotton or synthetics. Best of references. Resume upon request. PW-5452, Textile World.

POSITIONS WANTED

10 years supervisor experience in worsted top making and garretting synthetic fibers. Strong background in Plant Layout, Quality, Cost, Production and, Training Personnel, best of reference available. PW-5415, Textile World.

Mill Manager experienced Draper and box-looms. Cost, quality, labor relation conscious. Over 15 years mill plus textile engineering degree. Will relocate. PW-5458, Textile World.

SELLING OPPORTUNITY WANTED

Established Manufacturers Representative selling Automotive Industry seeks additional textile product for automobile body interiors. RA-4452, Textile World.

BUSINESS OPPORTUNITY

Knitted caps and hats for ladies and children. Western German manufacturer, important specialist in the European market is looking for relations with firms which would be interested in the importation and distribution of such articles in the USA. Gert Thelen & Co., Wittlich/Bez. Trier, Western Germany.

OWN AND OFFER FOR SALE

DYEING AND FINISHING TEXTILE MACHINERY

1—Gas Fired Tenter Finishing Range—Age 1954; Hunter 20 ton Padder 66", M & W Hi-Speed Tenter Frame 60', Hunter Housing 45', Simpson Batcher, West. AV motor Generator
1—Continuous Stainless Rope Bleach Range—Age 1954; Wiesner-Rapp 24" Saturator, Becco Stainless J-Box
1—Proctor & Schwartz 60' Loop Dryer, 126" sticks
1—Proctor & Schwartz 60' Loop Dryer, 102" sticks
1—Andrews & Goodrich Air Lay Dryer 54" long, 64" conveyor, elec. eye control, MG set
3—Rodney Hunt Stainless Encl. Dye Boxes, 16' wide, 47" deep
2—Van Doorne Stainless Encl. Dye Boxes, 12' wide 42" dp.
2—Rodney Hunt Stainless Encl. Dye Boxes, 10' wide, 47" dp.
1—Van Doorne Stainless Encl. Dye Box, 4' wide, 42" dp.
1—Rodney Hunt Sample Stainless Dye Box, 2' wide
2—Rodney Hunt Stainless Encl. Rope Slack Washers, 10' wide, Pneu. Squeeze Rolls
1—Amer. Laundry Monex Extractor, 17" dia., basket
1—Amer. Laundry Cascade Washer, 1 comp't
1—Amer. Laundry, Cloth Press
1—Rodney Hunt Stainless Dye Machine, 40", Pneu. Squeezer, Age 1956
1—Morrison Micro-Set Padder 60" wide, 2 rolls, 8 ton, DC. motor
1—Van Vlaanderen 3 roll Calender, 60" wide, lever set
1—James Hunter 6' Encl. Stainless Dye Box, 60" deep
1—Rodney Hunt 6' Encl. Stainless Dye Box, 60" deep
1—Riggs & Lombard 6' Encl. Stainless Dye Box, 60" deep
1—Morrison Continuous Open Width Dye Range, 60"—Age 1948; 2—Williams Units, 3—Washer Units, 15 ton Pneu. Padder, Vacuum Extractor, MG set
1—Werner Hyd. Schreiner Calender, 47" face, 50 ton capacity, 20 HP motor—Age 1954
2—Smith Drum Stainless Package Dye Machines, 500 lbs., each —1949
2—Smith Drum Stainless Package Dye Machines, 300 lbs., ea.—1940
1—Obermier Stainless Package Dye Machine, 300 lb.
3—Smith Drum Stainless Rotary Dye Machines, 300 lbs. ea., Model 1 RD-12, motor
2—Smith Drum Monel Rotary Dye Machines, 100 lbs., Model RD-12, motor
2—Smith Drum Monel Rotary Dye Machines, 50 lbs., belt
1—Smith Drum Monel Rotary Dye Machine, Model RD-12, 200 lbs., motor
2—Smith Drum Monel Rotary Dye Machines, Model RD-12, 25 lbs., motor
1—Smith Drum Monel Rotary Dye Machine, 50 lb. Model RD-11, motor
6—Proctor & Schwartz, 6 Drawer Tray Dryers
1—Smith Drum Monel Paddle Dye Machine, 10 lbs.
1—Smith Drum Sample Monel Rotary Dye Machine, 5 lbs.
20—Stainless Steel Dye House Trucks, 60" long
1—MacBeth Examining Light and Booth
3—Werner Encl. 70" Stainless Dye Jiggs
8—Werner 60" Stainless Dye Jiggs
1—Rodney Hunt Stainless 80" Open Width Washer, 2 comp'ts
1—Meadows Hyd. Embossing Calender, 72" wide, 2 rolls, 25 ton, Age 1949

ALLIANCE TEXTILE MACHINERY CORPORATION

APPRAISALS • TEXTILE MACHINERY • LIQUIDATIONS

37 NORTH 3RD STREET • ALLENTOWN, PENNSYLVANIA • HEMLOCK 4-4897-8

CIRCLE 400 ON READER SERVICE CARD

FOR SALE

DESIRABLE TEXTILE EQUIPMENT

2—WOOLEN CARDS, 60", Iron, with Hopper Feeds, Whitin B. Int. Feeds.
27—COMBS, Schlumberger, Delete, Segment width 310 mm.
1—CONVEYOR, Sargent, Port. type, 1952, Belt 30" wide x 20' long.
1—CLOTH CONDITIONER, Sjostrom, 64", B.B. Rolls, Pump and Folder.
1—CEILING CONDENSER, P&S., Double Drum, Model 549, Motor Drive.
1—DRYER, Andrews & Goodrich, 1956, 66", roller type, Cooling Can, Blower.
1—CAN DRYER, Tex. Fin. Co., 18 Cans, Monel, S.S., 49½" x 23" dia.
1—CENT. EXTRACTOR, Fletcher, tinned Copper Basket 28" dia., Safety C.
3—CEILING FOLDERS, 55" to 39" width, Speed Reducers, for Heavyweight M.
3—HOPPER FEEDS, 44", 54", spike apron and extended bottom aprons.
1 Pr. CLOTH GUIDERS, Foxwell, Air operated, Adjustable floor stands.
2—INSPECTING Mach., Hermas, Blake, 45" and 58", V-S Motor Drives.
29—LOOMS, C&K., 82", Veribest, 4x1, Automatic, 25 H.H., B.B. Crank Shafts.
1—LUMPER, Clark, B.B., 18", with feed table and motor drive.
1—MEASURING & ROLLING Mach., P&W., 66", 2 Roll, 1 Yd. Measuring Drum.
1—MEASURING & ROLLING Mach., P&W "AWC" Model, 80", 100 yd. dial.
2—MEASURING & INSPECTING Mach., Measuregraph, 64", Inspecting Table, M.D.
3—MULES, J&B., Giant Package, 288 Sp., 3" Ga., 12 Drums 57½" long.
1—NAPPER, S.A., Gessner, 80", 20 Roll, Reeves Energy Control, M.D.
1—NAPPER, Knitgoods, D&F., 90" 20 Roll, Turning Arms, Folder, M.D.
2—NAPPERS, D.A., D&F., 72", 80", 24 Roll, Folder, Motor Drive.
1—SHREDDING PICKER, D&F., 48", 12 Bar, B.B. Feed Table, Motor Drive.
1—MIXING PICKER, C&M., 40", New, 12 Bar, B.B. Cyl., Feed Table, M.D.
8—ROLLS, Rubber Covered, 28" dia. x 96" face width, shafts 2-15/16" dia.
1—STRIPPING SYSTEM, Abbington, with 2 tanks, Nash #9 Vac. Pump, 100 Hp. M.
3—SEWING MACHINES, Morrow, Model 60ABB, 60ABBY, table mounted, M.D.
1—WOOLEN SHEAR, P&W., Centurial, 3 Blade, 84", Folder, M.D.
1—SQUEEZE SET, R. Hunt, 2 Roll, 80", B.B. with Speed Reducer, Motor Dr.
1—TENTER FRAME, Pin Type, 60" wide, 30' long, Cloth Guiders, Folder, M.D.
30—CLOTH TRUCKS, 4 Wheel, platforms 24" x 48", Maple Constr., Stake Ends.

McDOWELL ASSOCIATES, INC.

General Offices 51-E 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front
Dock & Water Sts., Hudson, N. Y.
Phone: TA 8-3211

CIRCLE 401 ON READER SERVICE CARD

FOR SALE!

1—Butterworth 2-Roll 58" Face 16 Ton Pressure Pneumatic Embossing Calender

JAMES E. FITZGERALD

10 Purchase St. Fall River, Mass.
Tel. OS 8-5616

CIRCLE 403 ON READER SERVICE CARD

1—Werner 56" 15 Ton Padder
5—Werner—70" Dye Jiggs
1—Paterson 64" Tuber
1—8' Blickman enclosed dye beck
2—12" Blickman enclosed dye becks
1—Werner 55" Pad—15 Ton
1—Progressive 64" Examiner w/trumeter
2—VV beamers—50"—60"
1—VV—BB-calender—50"
2—VV—Dye Jiggs—60"
1—Vertical Set 18-130" SS cans 35 lb
1—Hinnekens 75" Bolloff Mach. #212

MAR-DAY TEXTILES

52-60 BERKSHIRE AVE. PATERSON 2, N. J.
MU-4-5132

CIRCLE 404 ON READER SERVICE CARD

All Types of Used Machines for Knit Underwear Mills

SCOTT & WILLIAMS and WILDMAN RIBBERS 8 to 16 cut, Sizes to 24"
TOMPKINS SPRING NEEDLE TABLES, All sizes and gauges
WILDMAN SPRING NEEDLE F8SS
WILLCOX & GIBBS FLATLOCKS, MERROWS, SINGER & METROPOLITAN SEWING MACHINES
Also Various types of SPECIAL MACHINES, CUTTING—CALENDERING—PRESSES, Etc.
Send us your Inquiries.

MOHAWK VALLEY KTG. MACH. CO.
Dwyer Ave. at Pixley St. Utica 2, N. Y. Phone 4-8109

CIRCLE 402 ON READER SERVICE CARD

FOR SALE

4 late model E Kidde machines 139" wide

3—40 gauge 10 bar 8 leaded
1—130" 36 gauge 6 bar 6 leaded
Machines are presently running and in operation. Can be seen by appointment. For further information Write

FS-5187, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N. Y.

CIRCLE 405 ON READER SERVICE CARD

6-FLETCHER NARROW FABRIC LOOMS

1953-55 9 FOOT SPEED-D.D. CIRCULAR BATTENS

8—ATWOOD 10-B DOUBLERS
2 LB. CAP. 100 SPINDLES—TAPERED PACK.
2—ATWOOD # 551 SUPER LOFT—1958
212 SPINDLES . . 142,000 R.P.M. . . REBUILT
2—MODEL 550 SUPER LOFT . . 1957 MODELS
216 SPINDLES . . 1 OR 2 LB. PACKAGE
10—U. S. REDRAWS . . 52 SPINDLES EACH
HEANIUM GUIDES . . 1954 . . SPINDLELESS
1—MODEL 44 ROTOCONER . . 40 SPINDLES
1—GESSNER NAPPER—80" HI TORC—1954
1—CALHOUN NYLON WARP SETTER—60"
1—H & D 16 SPINDLE HORZ. TWISTER—1956
1—COLLINS NOVELTY—60 SPINDLE—5½" GAUGE
1—WHITIN NOVELTY—200 SPINDLE—3" RING
24—REBUILT MODEL 50 CONERS
1—V. V. CLIP PUP TENDER RANGE—1957
32—DRAPER XD LOOMS—44"—DOBY
19—C & K W3AC LOOMS—84"—1953
10—C & K C-Y LOOMS—72"—4 x 1 MULTIP.
1—V. V. CALENDER—60"—7½ TON
1—J. HUNTER PAD—76"—15 TON—AIR

100—LOOMS, INC.—5 HEADS PER UNIT
100—24 B K SAUER—5 HEADS PER UNIT
16—FLETCHER—1953 13' TAPE LOOMS
2—FLETCHER H. D. WEBBING LOOMS—1953
2—FLETCHER H. D. VICTORY LOOMS
8—C & K H. D. WEBB LOOMS—1948
2—FLETCHER 28 SP. LIGHT WEB LOOMS
2—FLETCHER 68 SP. SPINDLE TAPE LOOMS
2—FLETCHER 66 SP. TAPE LOOMS
2—3 CAN FINISHING MACH. 4 ROLL CAL.
1—4 CAN . . 1-5 CAN . . 1-7 CAN FINISH MACH.
18" WITH FOUR ROLL CALENDERS
4—HACOBA QUILLERS—STICK QUILL
1—30 SPINDLE GLODDIE QUILLER
1—FRICTION 4-ROLL TAPE CALENDER
4—S. S. 250 LB. PADDLE DYE MACH.
1—S. S. 150 LB. PADDLE DYE MACH.
2—56" 2 ROLL PADS—S. S. PAN
3—48" 2 ROLL PADS—S. S. PAN

Wm. Rabinowitz & Sons

TEXTILE MACHINERY, BOBBINS & SUPPLIES

Gordon & Jordan Streets • HEmlock 4-9525 • Allentown, Pa. • Cable: RAB

ONLY PARTIAL LISTING . . . SUBJECT PRIOR SALES . . . SELECTED STOCK OFFERINGS

CIRCLE 409 ON READER SERVICE CARD

FOR SALE

Good Machinery—Low Prices

30—Drying Cans 80" x 30" dia.
1—Sipp E. Hy Speed Warper 83".
2—60" Waldron Coating Heads
2—Air Perme-ator Humidifier Units.
1—VV 3 Roll Calender 60"
51—Spdle Whitin Schweiter Auto Quillers.
1—RB&F 44" 5 color print machine.
1—Hinnekins Moire Calender 50" New.
1—Hercules Extractor 50" Copper Basket
2—88 Tru Shade 6' Dye Tubs, with 88 Hoods
1—Johnson Sizer, 5 Copper Cans 66" Wide.
1—Ingersol Rand 75 HP Air Compressor.

STAVE & KESSLER
106 Kearney Street
P. O. Box 1611 Paterson 16, N. J.

CIRCLE 406 ON READER SERVICE CARD

$3,000,000 Liquidation:
Chemical Plant at Orange, Texas

Type 316 stainless steel tanks, kettles, heat exchangers, columns, stills, crystallizers, centrifugals, pumps, valves, etc.

WONDERFUL VALUES, SEND FOR LIST

PERRY EQUIPMENT CORP.
1430 N. 6th St. Phila. 22, Pa.

CIRCLE 407 ON READER SERVICE CARD

BRASS **PIN-PLATES** All Sizes

PUT YOUR PIN TENTERS IN TIP-TOP CONDITION

SEND US OLD PLATE FOR QUOTATION

All Diameters Any Length

SOUTHERN TEXTILE WORKS
P. O. BOX 406 ANDERSON, S. C.

CIRCLE 408 ON READER SERVICE CARD

Spinning Frames—Completely Modernized

Available Now From Stock

65,000 spindles,	3"	gauge, Whitin Model F and B
20,000 spindles,	3"	gauge, Saco-Lowell (latest head)
15,000 spindles,	3¼"	gauge, Whitin Model B
7,000 spindles,	3½"	gauge, Whitin Model F and B
5,200 spindles,	3½"	gauge, Saco-Lowell (latest head)
6,000 spindles,	3½"	gauge, Fales & Jenks (latest head)
3,800 spindles,	4"	gauge, Whitin Model B

Completely Modernized with:

Open Type Umbrella Creels
Latch Bobbin Holders
Suction End Collection
Double Apron High Draft System
Individual Drive Pulleys with Ball Bearings
Ball Bearing Tape Tension Pulleys
Ball Bearing Top Drive Spindles
High Speed Rings

Suitable for: Warp or Filling Yarns, Cotton or Synthetic Staple

Attractive Prices on all or any portion of these lots
Delivery and Erection Supervision Can Be Included

ROBERTS COMPANY, Sanford, N.C.

manufacturers of textile machinery

Contact Trade-in Dept.: M. C. Golden, SPring 4-8811

Export Dealer Inquiries also Invited

CIRCLE 410 ON READER SERVICE CARD

LIQUIDATING

Modern Dyeing & Finishing Machinery of Ming Toy Dyeing Co., Paterson, New Jersey

1—Range 60" Pneumatic Padder 12½ ton, 64" x 70' Morrison Tenter, 60' Housing, Roller curer, pre-heater, 62" Parkinson Hydraulic Batcher, Auto Cut-Off, Mt. Hope J. Box.
1—Range-60" Hydraulic Padder 20 ton, 50' x 54" Morrison Tenter, Tower Heater 600° and Palmerette.
1—Range-60" Pneumatic Padder 12½ ton, 60' x 50" Butterworth Tenter, Burners and Palmerette.
1—Proctor & Schwartz 60' Loop Dryer 7 Fan 125".
1—Proctor & Schwartz 30' Loop Dryer, 5 Fan 101".
2—V.V. Tenters 60" x 40' S.S. Clips closed gears.
1—Morrison Tenter 54" x 50' S.S. Clips closed gears.
1—66" Hinnekens Boil-Off S.S. Chain, S.S. Sticks.
1—52" Hinnekens Boil-Off S.S. Chain, S.S. Sticks.
1—66" V.V. Low Palmer & Blanket.
1—66" Heat Treating Unit with Maxon Heater 420°.
2—60" S.S. Hercules Extractors.
1—80" Gessner Napper Hydraulic, Auto. Double acting.
1—Extra set of new rolls for Gessner Napper.
1—66" P&W 2 blade Shear.
1—65" (Infra Red) Singer with Brushes. Cool Cyl.
1—65" Singer American long flame burners, with brushes.
1—65" Textile Singer.
3—V.V. 73" and 59" Decaturs 950 yd. Blankets ea.
3—Werner 70" and 50" Pneumatic Padders, 2 rubber rolls 12½ ton with suction, Mt. Hope Guides.
4—60" and 50" V.V. Tubers with doubling.
3—60" and 64" Progressive Examiners with reverse.
1—58" V.V. Double Embossers. 1—54" V.V. Embosser.
2—60", 2—50" V.V. 3-Roll calenders.
1—6', 8' & 12' S.S. Totally Enclosed Dye Becks.
2—12' and 1—2' S.S. Dye Becks Open Type.
8' to 12' S.S. lined S.S. Reels Dye Becks.
4' to 12' S.S. lined Dye Becks.
3—60" Werner S. S. Jiggs.
3—51" V.V. S.S. Jiggs.
6—51" to 65" Beamers.
3—60" Eastwood Floppers.
1—Open width Washer 65", 3 compartments, 3 sets of squeeze rolls.
1—Verduin 66" Napper.
7—Merrow (60)D3B Sewing Machines.
1—Merrow (80)BDB Sewing Machine.
9—Metropolitan Sewing Machines.
2—Portable S.S. J. Boxes.
12—S.S. Tanks 36" x 36" with mixers.
9—S.S. Tanks 36" x 36" and 24" x 36".
6—Hydraulic Roll Trucks.
3—Hydraulic Lifts for Skids.
2—½ ton Budget Electric Hoists.
1—New B.O. S.S. Chain.
6—1 and ½ ton Chain Hoists.
3—Sets of 70", 60" and 50" Pad Rolls.
4—60" and 2—50" Calender Rolls.
2—3 H.P. Ingersoll Rand Compressors, size 4.
4—Water Fountains.
1—G.E. Welder.
Machine Shop Equipment including Lathes, Drills, Hacksaws, Presses, etc.
Carpenter Shop Equipment.
Laboratory Equipment.
Atlas Launder-ometer.
14—18 gal. S.S. Tanks.
42—S.S. Pails and 42—S.S. Dippers.
Shells, skids, vari-drives, saws, tables, vises, pumps, Hand Trucks, office equipment, etc.

A & M BLANK CO., INC.

301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.

SHerwood 2-1367-8

CIRCLE 411 ON READER SERVICE CARD

FOR SALE

5—Banlon Machines
18—Fluflon Machines
1—Taslan—U. S. Machine
15—Atwood—10B Doublers
1—S.S. Autoclave
1—Whitin Ring Twister—Mod. D
11—Unirails Twisters—501
6—U. S. Hdless. Pkg. Twisters
8—Utility D.D. Uptwisters
100—Universal No. 50 Winders
80—Foster 75A Winders
5—Atwood Mod. 200 Redraws
2—Sipp Spdless Redraws
2—U.S. Ring Twisters
Smith Drum S.S. Skein Dyers 1-12, 1-10, & 1-7 Arm
1—Foster Mod. 102 Cone Winder
4—C & K W-2 Looms
2—Tirrell Strippers
12—Reiners—28 Gauge RT2
1—Fletcher 2 Fly Reeler
20M—10B Spools 8" T. x 4⅜" B.
10M—Phen. Spools 6" T. x 3½" H.
10M—Shafts 4⅜" T. x 5" H.
3—Metallic Slitters
3—H & W Steam Boxes

BOBBINS—SPOOLS—QUILLS—*All Sizes & Types*

PENNSYLVANIA SPOOL & EQUIPMENT CO.

425 LEHIGH ST. ALLENTOWN PA. Phone 3-7545

Complete mill for making linen thread. Complete mill for a slitting & reinforcing metallic yarns.

CIRCLE 412 ON READER SERVICE CARD

TEXTILE AUXILIARIES INC.

"FOR THE BEST IN RECONDITIONED TEXTILE MACHINERY"

1—Warner 72" S.S. Burlington Boil-Off Machine with four S.S. Beams, complete with Motor, Pumps—all complete.
1—60" x 60" Morrison Tenter with #7 W.J. Top Opening Clip.
1—6 Color 42" R.S.&F. Printing Machine, complete with Backrigging, Dry Cans, Motor, etc.
2—48" Manual Pressers, 3 Roll Friction Calenders.
2—60" x 50" Winsor & Jerauld Swing Tenters, #5 Stainless Steel Clips.
1—30" x 72" Butterworth Tenter Frame.
1—40" x 84" Winsor & Jerauld Tenter Frame #7 High Speed Chain.
1—72" 2 Roll Simpson Cut-Off Winder.
1—5 Burner 50" Gas Singer.
Reeves Drives, All Sizes, Opened and Closed.
Stainless Steel Tanks.
Copper Jacketed Mixing Kettles.
Scutchers—all widths.

We carry spare Padder & Calender Rolls all sizes, also motors from 1 HP to 100 HP.

These are only a few items: *For Detailed List:* *Write, Wire or Phone.*

Dexter 1-9650 Dexter 1-8837 Providence, R. I. 146 West River Street

PROVIDENCE, R. I.

CIRCLE 413 ON READER SERVICE CARD

Searchlight Equipment Locating Service

No Cost or Obligation

This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.) No charge or obligation.

First, read the dealer ads on these pages. A 5-minute study may locate the equipment now.

Second, send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

SEARCHLIGHT
Equipment Locating Service
c/o Textile World
P. O. Box 12, N. Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

SEARCHLIGHT
Equipment Locating Service
c/o Textile World
P. O. Box 12, N. Y. 36, N. Y.

Please help us locate the following used equipment:

.....
.....
.....

NAME .....
TITLE .....
STREET .....
COMPANY .....
CITY .....
ZONE ..... STATE 11/60

MODERN TEXTILE MACHINERY

BORDER CITY DIV. OF SAGAMORE MFG. CO.—CANADIAN COTTONS LTD.

WEAVING

260—Draper XD Looms, 54" reed, Diehl and motor, 1947-1951

14—Draper D Looms 66" cam type, Motor Drive
33—C & K C2 Looms 40"
800—Draper K Looms, cam, 47" Reed, Motors
3—Barber-Colman Portable Tying-In Machines, 1949

SPINNING

4—Aldrich Single Process Pickers
30—H. & B. Revolving Flat Cards, 3" ga.
111—Whitin F Spinning Frames, 3"
2—Whitin Twisters, 3½" gauge

THROWING

12—Atwood Redraw Machines, 1950, 68 spindles
56—Universal #10 Uptwisters, 184 spdls. 2 lbs. headless package, 1950
3—Sipp-Eastwood Warpers, '49
1—Johnson 7 can Slasher, 1949
1—Uxbridge Gentle Air Slasher
1—Barber-Colman Spooler, 162 pockets, Model KK
3—Abbott Quillers, 120 spdls. 1955, Pin Boards
208—Spindles Whitin Schweiter Quillers, Motor Drive

DYEING AND FINISHING

1—Cocker Indigo Dye Range, '48
1—Rodney Hunt Stainless Open Width Washer, 80", 2 compartment
4—Venango S.S. Package Dye Unit, 1948, 3-500 lbs. 1-250 lbs.

A COMPLETE PRINT SHOP
4—Rice Barton & Fales print machines 52" wide 1-3 color, 1-8 color, 1-10 color, 1-12 color
300—Copper Design Rollers

4—Blickman Totally Enclosed S.S. Dye Boxes, 2-12', 2-8'
44—S.S. Dry Cans 142 x 23" dia.
4—S.S. Dry Cans, 66"—50 lb. pressure
61—Norton S.S. Dry Cans 48" x 23" dia. Motor & Drive
28—Montford Double Acting Nappers, Motor & Drive
1—Parks & Woolson Hi-Speed Davidson Shear 66½", 1947
1—P & S. Cure Dryer 25', gas fired, 1954

Republic
TEXTILE EQUIPMENT COMPANY

APPRAISALS
•
PURCHASE AND SALE TEXTILE MACHINERY
•
LIQUIDATION OF MILL PROPERTIES

40 Worth Street, New York 13, N.Y. • COrtlandt 7-1590

CIRCLE 414 ON READER SERVICE CARD

THE DUNN CORPORATION
PO BOX 4306 GE 4-4041
EAST PROVIDENCE, R. I.

Offers for Sale as Exclusive Liquidating Agent the Machinery & Equipment of

PORTLAND WOOLEN MILLS
"Wool O'The West"
PORTLAND, OREGON

(PARTIAL LISTING)

CARDING & PICKING
6 Davis & Furber, 48" wide mixing pickers, M.D.
6 Big Ben rag pickers, 20" x 36" cylinder, ball bearing, with stainless steel bit control, M.D.
9 Sets, Whitin Model G-4, 3 cylinder, 60 x 60 woolen cards, with Whitin Model F super feeders, Peraltas, Broad Band Feeds, Double Rub Tape Condensers, Waste End Blowers, Individual Motor Drives. Years 1941-1949
2 Sets, Whitin Model G-1, 3 cylinder, 60 x 60 woolen cards, with Whitin Model F super feeders, Peraltas, Broad Band Feeds, Double Rub Tape Condensers, Waste End Blowers, Individual Motor Drives. Years 1939-1941
1 Abbington stripping system for 16 sets cards, 2 tanks, Ingersoll Rand Compressor, 50 HP motors. Year 1947
1 Armstrong Cott Buffing machine, M.D.
1 Taylor Stiles, Little Giant, 2 blade stock cutter, 15" blades. Year 1958, M.D.

BATT MAKING UNIT
6 Pathe Teel Co. quilting machines, 7 ply creel, 48" wide, M.D.
2 Sets Davis & Furber, 48 x 48 worsted cards, M. D.
1 James Hunter, 48" lapper with 95" run out apron, James Hunter, cutting and rolling up head for making batts, M.D.

SPINNING, TWISTING & WINDING
30 Whitin, Model E Wool Spinning Frames, 120 spindles each, 6½" gauge, 5" ring with continuous top rolls, double line bottom roll, Automatic ring oiling system, Individual Motor Drives.
1 Whitin Fancy Twister, 100 spindles, Model B, 4" ring, 5" gauge, knee brakes M.D.

DRESSING & WEAVING
2 Whitin High speed dressing units, solid drum type with Allen Cone Creel, 400 live ends, stop motions, 2 beamers and 2 compressors, M.D.
1 Titan Warp Tying Machine for 92" and 82" looms. Year 1958—With Stands
80 Crompton & Knowles, 92" and 82" looms, some all purpose, some convertible, all are motor driven with stop motions, indicator lights, and oiling system.
4 Birch Bros. & Parks & Woolson, Greige Goods Power Perches, 94" with through lighting, forward and reverse motion, swing folders, M.D.
8 Birch Bros. & Parks & Woolson, Finish Goods Perches, 84" and 72" with through lighting, forward and reverse motion, swing folders, M.D.

DYEING EQUIPMENT
4 James Hunter, 5' Piece Dye Kettles, all stainless steel, totally enclosed, M.D. with controls
1 James Hunter 5' Piece Dye Kettle, totally enclosed, all stainless steel, M.D. with controls
1 James Hunter, 3' piece dye kettle, totally enclosed, all stainless steel, M.D. with controls.
8 Riggs Lombard, all stainless steel, stock dye kettles, 250 lb., 500 lb. and 600 lb. with self balancing tops M.D.
1 Riggs Lombard, all stainless steel stock dye kettle, 100 lb. capacity, M.D.

WET FINISH
2 James Hunter, *all stainless steel throughout*, fulling mills, Model 26B with variable speed drive
3 Riggs Lombard, #65 fulling mills, stainless steel lined, throats, traps and guides, M.D.
3 James Hunter, *all stainless steel throughout*, 8' cloth washers, M.D. with rubber rolls
3 James Hunter, 80" and 90" wide padders with stainless steel drip pans, M.D.
2 Curtis & Marble, Yorkshire type crabs, single bowl, 72" wide, M.D.
3 James Hunter, Dolly washers, 8' with rubber rolls, M.D.
1 James Hunter 12' *all stainless steel throughout* cloth washer, M.D.
1 Riggs Lombard, open width soaper, with 2 sets 96" squeeze rolls, two bowls, 12" wide x 22" deep, M.D.
1 Riggs Lombard, Cloth Carbonizer and Dryer, Year 1948, 54" to 90" with three sets, 110" squeeze rolls, wet out tank, all stainless steel acid tank and late type dry mill, M.D.

DRY FINISH
1 Egan Electrolizing Machine, 66" wide, Year 1958
1 Gessner, Semi-Decatur, 72" wide, with controls, pump, leader and Air Guiders, M.D.
1 Gessner, 72" wide, High speed PD-20 press with SS, scray
1 Parks & Woolson, 4 cylinder steam brush, swing folder and flock collecting system.
1 Parks & Woolson, Davidson, 3 blade shear, with list saving motion, flock collecting system, swing folder, M.D.
1 James Hunter, cloth dryer, 42" to 72", 8 section, 8 pass, with overfeeds, automatic guiders, scray and folder, M.D.

All equipment is offered subject to prior sale or withdrawal without notice.

CIRCLE 415 ON READER SERVICE CARD

WE OFFER FOR SALE . . .

4 FOSTER 102 CONE WINDERS

6—Draper 50" X-2 Looms, 1950
2—Cloth Numbering Machines
3—Foot Power Sewing Machines
12—C&K 60" looms, model C2, multipliers, leno motions, 25 harness
20—D & B 40" Cotton Cards
1—Cocker Warper & Creel, 824 ends
26—C&K 56" S.3 looms, M.D., W/Dobby
1—P & W 3-blade Shear Complete
1—Barber Colman 56" LL Knotter
1—Knowles, 1953, Drum Type H.S. Dresser W/Creel, 96"
1—Set W&S Pin Drafters with Creels
2—Holdsworth Gill Reducers
1—P & W 72" x 36" Semi Decater, 1947
2—Collins Fancy Twisters, 200 spdls.
24—C & K 82" Beams, 30" Flanges
2—Scutchers 72" and 78" complete
Nash Pumps sizes, 1-2-3-4-5-6
2—Whitin "B" Fancy Twisters, 4" gauge, 200 spindles, M.D.
2—Tolhurst 60" S.S. Extractors
1—Gessner Vacuum Extractor, Folder, 76", Adjustable, M.D.
1—Terrell Bobbin stripper, M.D.
1—Hermas 4 Blade Vertical Shear 58"
1—D & F Fearnaught Picker with feed
1—H & W yarn conditioning oven
2—Hunter Fulling Mills 26E
1—Smith Drum 100 arm S.S. skein dye
1—Sample Skein Dryer
2—Hussong S.S. stock & skein dye
1—American Laundry Washer
Stainless Steel Tanks, all sizes
1—Abbott 80 spindle Quiller
1—H & T Water Softening Unit
1—D & F 48" Mixing Picker 6 Bar

EXCLUSIVE LIQUIDATION

1—Whitin 3 cyl. 60" x 60" Woolen Card, Year 1947, T-Slot, Peralta, Double Rubb tape, M.D.
1—D & F 3 cyl. 60" x 60" Woolen Card, Closed Bearings, Peralta, Double Rubb Tape, M.D.
1—Simple Card, 18" x 13", M.D.
4—Whitin Model A Spinning Frames, 3" Ring, 4½" Gauge, M.D.
2—Whitin Model A Spinning Frames, 3" Ring, 4" Gauge, M.D.
1—D & F 6 Bar 48" Mixing Picker with Feed, Oiling Device, Blower, M.D.
1—Schofield Picker 42" Wide, 32" Dia., BB, 1950, M.D.
1—P & S Ceiling Condenser

MAY BE SEEN IN OPERATION

Write, Wire or Phone Today—CABLE ADTEX

ATCO

ADVANCED TEXTILE COMPANY

P. O. Box 661 • STuart 1-3633 • Providence, R. I.

CIRCLE 416 ON READER SERVICE CARD

START THE FALL WITH IMPROVED MACHINERY

300—Parks-Cramer Humidifier heads
4—1949 Whitin sliver lappers, 9½"lap
12—del. Whitin bi-coil drwr., 1948, 14" coilers
1—Staubli shuttle truing machine, NEW
6—B/C Portable Warp Tying machines, complete Models LC, K, LS, LL
3—E&H Cloth Folders, 44" & 47½" air lifts
8—Terrell Quill strippers, Models R, L
1—Eastwood salvage spooler
4—Terrell Roving bobbin strippers
10—Diehl Transmitters, 1 HP/550V for XD looms
1—700 end Sipp Eastwood Warper Creel
1—350 end Universal creel
1—Small hand paper baling press
1—Shawmut reed cleaning machine
1—Cloth trimmer, 72", Kasmgraph attachment
20—Cloth inspecting machines, all styles
1—Uster warp frame, 108", for tying machine
4—48" Dye jigs, S.S., tandem
6—60 & 80 gal. S.S. jacketed kettles
3—Haskell-Dawes 5 formers, 12x22", 1956
1—Edmunds high-speed layer, backstd., ⅝"
5—Combination rope machines, ¼—½" rope
1—Haskell-Dawes backstand
15 M—8 x 9½ spools on bobbins for above
200—11 x 14 spools on bobbins
15—Coilers and Reelers for rope
5—Cone and Pirn creels
3—Lab mixers
2—Cyclone hoists, ½ ton, 550 volt
1—Shaw box jib crane, 8' boom
1—Unitable conveyor used as feeder
1—Hytrol conveyor 13' x 18" wide
3—Tanks, open top, rectangular, 1000 gal.
12—Platform scales, all sizes
10 M—Dbl rod heddle frames, 10" hed., 44-127½"
10 M—Single rod heddle fr., 12" hed., 40-87½"
1000 M—Heddles, all types, 10, 11, 12, 13, 14, 16"
20 M—NEW 22" selvage heddles
500—Loom motors, ½-1½ HP, all voltages

MACHINERY SALES CORP.

131 Court Street, P. O. Box 367
New Bedford, Massachusetts Tel: WYman 9-6274

CIRCLE 417 ON READER SERVICE CARD

WANTED FOR

SAABA YARN PRODUCTION

One or two Universal No. 10 Ring Twisters

with No. 511 Bulk Yarn attachments

Details to:—

WM. TATTON & CO. LTD.
Buxton Road, Leek,
Staffordshire, England

CIRCLE 418 ON READER SERVICE CARD

WANTED

Used McBride Magazine Creel

800 to 1000 Ends for rayon

THE HAMILTON COTTON CO. LIMITED
Hamilton, Ontario, Canada

CIRCLE 419 ON READER SERVICE CARD

Watch—
the *Searchlight Section*
for
Equipment Opportunities

FOR SALE

9—NEW Whitin Coilers, 18 x 42
1—Sipp EN Warper with 816 End Creel
2—Barber-Colman Knotters, LC, LL
16—44" XK Looms, Center Fork, Dobby
10—C&K C-4 Looms, 72", 4 x 1
50M—14" Drawtex Heddles in 51" Frames
20—Diehl 1½ HP Loom Motors, 1800, 220V
1—E&H Cloth Folder, 58", Air Lift
18M—Abbott Pinboards, 80 Pin
6—Yale ½ Ton Spur Gear Hoists
1—Strobotac, 1—Troemner Balance
1—48" x 36" Stainless Tank, Dished
58—Veeder-Root 3 Shift Pick Counters

INDUSTRIAL MACHINERY CO.

32 Boomer St. P. O. Box 261
Fall River, Mass. Osborne 4-8161

CIRCLE 420 ON READER SERVICE CARD

EMPLOYMENT OPPORTUNITIES

(Continued from page 181)

ENGINEER

TEXTILE EQUIPMENT

Splendid opportunity for engineer to affiliate with fast growing, successful manufacturer of glass fiber products.

Should have manufacturing experience in glass fiber rovings—winding, weaving and mat forming. Basic knowledge of coating and sizings used in conjunction with reinforced plastics desirable.

Salary—$7,500 to $12,000 per year dependent upon capabilities and experience. Excellent insurance, medical and pension plans. In reply, please state full details of education and industrial experience.

P-5388, Textile World
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERING FIRM

Seeks Young Textile Engineering Graduate

With approximately ten years experience in manufacturing and finishing, to do both engineering and sales contact.

Write P-5517, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CHARLES P. RAYMOND SERVICE, Inc.

Over 35 years in business, serving employers seeking new executives and executives seeking positions. We invite your inquiries.

294 Washington St., Boston, Mass.
Phone LI 2-4547

LIQUIDATING

MODERN DYEING AND FINISHING MACHINERY OF FAIR LAWN FINISHING CO., FAIR LAWN, NEW JERSEY

PARTIAL LIST

2—72" x 100' Enclosed Tenter Ranges, steam and gas heated, with M.G. Sets, etc.
1—72" 4 Compartment Tensitrol Washer, M.G. Set, etc.
1—60" Benninger Pressure Jigg.
18—50", 60", 70" Enclosed and Open Stainless Steel Dye Jiggs.
16—6' to 20' Enclosed and Open Stainless Steel Dye Becks.
1—P. & S. 72" Loop Curer, steam and gas.
1—10 Fan Loop Dryer, 104" revolving poles.
3—60" Tenter Frames, 2—40', 1—30' lengths.
3—3 Roll Finishing Calenders, 50"—60" widths.
2—Semi Decators, 50"—60" widths.
1—3 Roll 60" Pneumatic Padder.
1—2 Roll 65" Pneumatic Padder.
2—65" Pneumatic Quetches.
2—80" Nappers, 1—18 roll, 1—24 roll, both double acting, new clothing.
1—Palmer 70" wide, with 60" blanket.
1—Hinnekens Boil-off Machine, 66".
Large supply of Stainless Steel Tanks, Expander Rolls, New Bow Straightener, Office Equipment, Laboratory Equipment, Machine Shop Equipment, Shelving, etc.

10—Print Machines, 6 to 10 colors, 40" to 64" widths

Your inquiries are invited.

REPRESENTATIVES ON PREMISES

SOUTHERN OFFICE
IPA SOUTHERN, INC.
610 S. Carolina Nat. Bk. Bldg.
Greenville, South Carolina
Tel: Cedar 2-3562

IPA

NORTHERN OFFICE
INDUSTRIAL PRODUCTS OF AMERICA
140 Market St., Paterson, N. J.
Sherwood 2-6614 Cable: Texindus

We welcome your inspection.

Plant Phone: SWarthmore 6-1000

CIRCLE 421 ON READER SERVICE CARD

COMPRESSORS - VACUUM PUMPS

FOR THE FINEST IN REBUILTS

1902 AMERICAN 1960

100 CFM 125 psi 6 x 7 Ing. Rand ES1
138 CFM 100 psi 7x7 Ing.-CPT-Worth
283 CFM 25 psi 10x7 Ingersoll ES1
321 CFM 125 psi 10x11 Chicago T-E
384 CFM 100 psi 10x9 Joy WG9
420 CFM 40 psi 12x9 Ing. ES-1
465 CFM 100 psi 12x11 ES-1-CPT
528 CFM 100 psi 14x12 Inger.-Gardner
660 CFM 125 psi 11½x7x7 Joy WN10Z
686 CFM 100 psi 14x13 Ing.-CPT
823 CFM Vac. 18x7 Ing. ES
940 CFM 30 psi 17x11 Ing. ES-1
1016 CFM 55 psi 17x13 Ing. ES
1100 CFM Vac. 17x7 Joy WGV9

1050 CFM 60 psi
13—13 x 12 Ing. x RE
125 HP 3-60-220—277 RPM
Complete—Excellent

1270 CFM 60 psi 19x13 Ing. ES-1
1410 CFM 25 psi 20-13 Worth Hb-Ing. ES
3135 CFM Vac. 31x13 Ing. ES

1065 CFM (actual) 100 psi
1—Fuller C300-300H
200 HP Syn .8 PF 3-60-440
Starter—MG Set

American Air Compressor Corp.
Dell & Tax Streets — North Bergen, N. J.

CIRCLE 422 ON READER SERVICE CARD

WE OWN and OFFER

1—Hermas 80" Inspecting Machine
1—Penn Air Compressor 7½ x 5 (L.P.)
1—West. Compressor ¾-110V-H.P.
1M—AMCO #5 Atomizer Humidification Heads
24—WALTON 110-V Reconditioned Humidifiers

4—FOSTER 102 Paper Cone Winders 7" T
2—S.E. Mag. Cone Creels 756 Live Ends
6—#50 Cone Winders-Pineapple-Skeins

1—B.C. Knotter LC-144—Hand Operated
1—B.C. Knotter LL-56" Model Motorized
50—Milton All Steel Loom Beams—24" Heads
25M—Harness Frames—Save up to 50%

Stainless Steel Heddles and Loom Reeds

PAWTUCKET MILL SUPPLY CO.
240 York Avenue Pawtucket, Rhode Island

CIRCLE 423 ON READER SERVICE CARD

Announcing LIQUIDATION SALE of the former Bachman-Uxbridge Plant, Macon, Georgia

31—Warner-Swasey Pin Drafters, 27-dual, 4-quad
4—Whitin Quik Set Roving Frames, 1025, 120 spdls.—1948-54
4—Saco-Lowell Quik Set Roving Frames, 60 spdls.—1951
9,780—Spdls. Long Draft, Long Staple Spinning Frames, overhead cleaning
7—Foster Model #102 Paper Cone Winders, 5—110 spdls., 1—100 spdls., 1—94 spdls.
7—Whitin Model BB Twisters, 212 spdls. ea. 4½" ga., motor
1—Foster Model #57 Doubler, 100 spdls.
5—Atwood 10B Downtwisters, 100 spdls., 6" ga.
64—WARNER-SWASEY "SULZER" AUTO. SHUTTLELESS LOOMS, 80" wide

REAL ESTATE—100,000 sq. ft. one floor modern mill construction with warehouses

EXCLUSIVE AGENTS:

Alliance Textile Machinery Corp., 37 N. 3rd St., Allentown, Pa., HEmlock 4-4897
Interstate Textile Equipment Co., 200 Dunavant St., Charlotte, N. C. EDison 3-1894

CIRCLE 424 ON READER SERVICE CARD

INDEX TO ADVERTISERS

An * indicates advertisers who have essential technical information on their products in the **IMPORTANT 1960 FACT FILE ISSUE.**

*Abbott Machine Co. 177
Air Reduction Chemical Co. 108
Allied Chemical Corp.
National Aniline Div. 26, 27
Solvay Process Div. 111
Allis-Chalmers Mfg. Co. ... 41
*American Moistening Co. .. 12
American Viscose Corp. ..17-20
Avistrap Div. 147
Antara Chemicals Div. General Aniline & Film Corp. 76
Armstrong Cork Co. .34, 35, 153
Arnold, Hoffman & Co. 107
Ateliers Roannais de Constructions Textile 157
*Atkinson, Haserick & Co. .. 124

Bahnson Co., The 29
Barber-Colman Co. 167
Beck Machine Corp., Chas. 179
Bond Co., Charles 146
*Booth Co., Benjamin 136
*Bristol Co., The 100
*Butterworth & Sons Co., H. W. 25

*Carroll & Co., J. E. 148
Celanese Corp. of America 122, 123
Chemical Div. 97
Central Motor Lines Inc. .. 7
*Clinton Corn Processing Co. 112
*Cocker Machine & Foundry Co. 36
*Continental Diamond Fibre 28
Corn Products Sales Co. ... 103
*Crompton & Knowles Corp 16

*Davis & Furber Machine Co. 144
Dayco Textile Products Co. Div. Dayco Corp. 38, 39
Delta Airlines 154
Despatch Oven Co. 176
Diamond Crystal Salt Co. 96
Diehl Mfg. Co. .....2nd Cover
Dinsmore Mfg. Co. 176
Draper Corporation..1, 140, 141
Duesberg-Bosson of America, Inc. 179
DuPont de Nemours & Co., E. I. Electrochemicals Dept. 86, 87
Textile Fibers 128, 129

Eastern Airlines 172
Eastman Chemical Products Inc. Chemical Div. 93
Extremultus, Inc. 155

*Fairbanks Co., The 6
*Felters Co. 142
Foster Machine Co. 133
Franklin Process, Div. of Indian Head Mills. 99

Gates Rubber Co. 135
*Geigy Dyestuffs Div. Geigy Chemical Corp. .. 81
*Gessner Co., David. 104

Hagan Chemicals & Controls, Inc. 106
Hooker Chemical Corp. .. 105
*Howard Bros. 42
Hubinger Co., The. 117
Hyatt Bearings Div. General Motors Corp. .. 37

Ideal Industries, Inc. 10
*Ives Co., Inc., Loyal T. .. 156

Jenkins Bros. 151
*Johnson Corp., The. 178

Keever Starch Co. 169
*Kidde Textile Machinery Corp. 175
Krantz Maschinenfabrik, H. 113
Krantz Sohne, H. 113

Leesona Corp. 32, 33, 127
*Link-Belt Co. 31
Lockwood Greene Co. 174
Lubriplate Div., Fiske Bros. Refining Co. 152

M-B Products 160
*Maple Flooring Mfgrs. Assocs. 178
McBride Co., Inc., Ed. J. .. 138
*Meese, Inc. 161
*Monsanto Chemical Co., Plastics Div. 109
*Mt. Hope Machinery Co., Inc. 160, 168

Norgren Co., C. A. 14

Parks-Cramer Co. 145
*Perfecting Service Co. 148
Pfaudler-Permutit, Inc. Permutit Div. 163
*Portland Co., The. 166
*Powell Co., Wm., The. 143
*Proctor & Schwartz, Inc. .. 101

Raybestos-Manhattan, Inc. Manhattan Rubber Div. 92
Reiner, Inc., Robert. 171
Ridge Tool Co. 161
Roberts Company 2, 3
*Rohm & Haas Co. 82

*Saco-Lowell Shops 149
*Scott Testers, Inc. 150
Schweiter Ltd. 30
Shell Oil Co. 15
Simco Co. 158
*Sirrine Co., J. E. 166
*SKF Industries Inc. 40
*Societe Alsacienne de Constructions Mecaniques. . 124
*Sonoco Products Co. 130
Southern Machinery Co. ... 137
Steel Heddle Mfg. Co. .....3rd Cover

Texaco Inc. 7, 8
Texas Instruments Incorporated, Metals & Controls Div. 13
Textile Banking Co. 162
Textile Machine Works ... 44
*Torrington Co., The. 173
Toshin-Kogyo Co., Ltd. 102
Tsudakoma Industrial Co., Ltd. 134

Unionmatex Textilmaschinen-Union GMBH ... 11

*Veeder-Root Inc. ....4th Cover

West Indies Chemical Works, Ltd. 106
Whitin Machine Works .30, 159
Wildman Jacquard Co. 139
Wolf & Co., Jacques. 98
Wood's Sons Co., T. B. 164, 165
Wyandotte Chemicals, Michigan Alkali Div. 110

Young Aniline Works. 110

CLASSIFIED ADVERTISING
F. J. Eberle, Business Mgr.

EMPLOYMENT OPPORTUNITIES 181, 18
BUSINESS OPPORTUNITIES 181
NOTICES Legal 181
EQUIPMENT (Used or Surplus New) For Sale 182-187
WANTED Equipment 186

ADVERTISERS' INDEX

Advanced Textile, Machy. Co. ...186
Alliance Textile Machinery Corp. 182, 187
American Air Compressor Corp. .187
Blank Co. A & M. 184
Dunn Corporation 185
Fitzgerald, James E. 182
Hamilton Cotton Co., Ltd. The. .186
I P A Southern Inc. 187
Industrial Machinery Co. 186
Industrial Products of America 187
Interstate Textile Equipment Co. 187
Machinery Sales Corp. 186
Mar-Day Textiles 182
McDowell Associates, Inc. 182
Mohawk Valley Knitting Machinery Co. 182
Pawtucket Mill Supply Co. 187
Pennsylvania Spool & Equipment Co. 184
Perry Equipment Corp. 183
Rabinowitz & Sons, Wm. 183
Raymond Service Inc. Charles. .186
Republic Textile Equipment Co. .185
Roberts Co. 183
Southern Textile Works. 183
Stave & Kessler 183
Tatton & Co. Ltd. Wm. 186
Textile Auxiliaries Inc. 184

Looking for More Information?

TEXTILE WORLD editors provide this Reader-Service Card so you can get more complete dope on things you read about in TEXTILE WORLD. Use the postcard attached below to find out more about DYES and CHEMICALS, EQUIPMENT and SUPPLY NEWS, NEW LITERATURE, SEARCHLIGHT opportunities, ADVERTISERS' LITERATURE, and REPRINTS from back issues. And you can get more data on ADVERTISED ITEMS, too, just by using this card.

Don't Forget . . .
. . . to write your name and address on the card—and your title and company affiliation, too. Then all you do is circle the key numbers that correspond to the numbers appearing on the Dyes and Chemicals, Equipment and Supply News, New Literature, Advertisers' Literature, or on whatever department you are interested in. Then all you do is drop the card in the mail—there isn't any need to add stamps.

To Correct . . .
. . . your TEXTILE WORLD mailing address, just write your name and new address on the lines provided for that purpose on the postcard. And write clearly across the card: ADDRESS CHANGE. (Please add your old address.) Then mail off the card. We'll make the change just as quickly as possible, so you won't have to wait for your TEXTILE WORLD.

ADVERTISEMENTS:				INSIDE FRONT COVER						INSIDE BACK COVER						BACK COVER		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	
109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	
127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	
145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	
163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	
250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	
268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	
286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	
304	305	306	307	308	309	310												
SEARCHLIGHT:			400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	
415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	
433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	
451	452	453	454	455														
EQUIPMENT AND SUPPLY NEWS:				E1	E2	E3	E4	E5	E6	E7	E8	E9						
E10	E11	E12	E13	E14	E15	E16	E17	E18	E19	E20	E21	E22	E23					
E24	E25	E26	E27	E28	E29	E30	E31	E32	E33	E34	E35	E36	E37					
E38	E39	E40	E41	E42	E43	E44	E45	E46	E47	E48	E49	E50	E51					
E52	E53	E54	E55	E56	E57	E58	E59	E60	E61	E62	E63	E64	E65					
E66	E67	E68	E69	E70	E71	E72	E73	E74	E75	E76	E77	E78	E79					
NEW LITERATURE:				L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11				
L12	L13	L14	L15	L16	L17	L18	L19	L20	L21	L22	L23	L24	L25					
L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37	L38	L39					
L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	L53					
DYES & CHEMICALS:				D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11				
D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24						
ADVERTISERS' LITERATURE:				A350	A351	A352	A353	A354	A355	A356	A357	A358	A359					
A360	A361	A362	A363	A364	A365	A366	A367	A368	A369	A370	A371	A372	A373					
A374	A375	A376	A377	A378	A379	A380	A381	A382	A383	A384	A385							
REPRINTS:		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12					
A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A24	A25	A26					
A27	A28	A29	A30	A31	A32	A33	A34	A35	A36	A37	A38	A39	A40					
A41	A42	A43	A44	A45	A46	A47	A48	A49	A50	A51	A52	A53	A54					

Name..... Title.....

Mill..... Address.....

Home Address.....

City..... State..... NOVEMBER, 1960 - 2

ADVERTISEMENTS:				INSIDE FRONT COVER						INSIDE BACK COVER						BACK COVER		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	
109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	
127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	
145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	
163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	
250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	
268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	
286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	
304	305	306	307	308	309	310												
SEARCHLIGHT:			400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	
415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	
433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	
451	452	453	454	455														
EQUIPMENT AND SUPPLY NEWS:				E1	E2	E3	E4	E5	E6	E7	E8	E9						
E10	E11	E12	E13	E14	E15	E16	E17	E18	E19	E20	E21	E22	E23					
E24	E25	E26	E27	E28	E29	E30	E31	E32	E33	E34	E35	E36	E37					
E38	E39	E40	E41	E42	E43	E44	E45	E46	E47	E48	E49	E50	E51					
E52	E53	E54	E55	E56	E57	E58	E59	E60	E61	E62	E63	E64	E65					
E66	E67	E68	E69	E70	E71	E72	E73	E74	E75	E76	E77	E78	E79					
NEW LITERATURE:				L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11				
L12	L13	L14	L15	L16	L17	L18	L19	L20	L21	L22	L23	L24	L25					
L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37	L38	L39					
L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	L53					
DYES & CHEMICALS:				D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11				
D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24						
ADVERTISERS' LITERATURE:				A350	A351	A352	A353	A354	A355	A356	A357	A358	A359					
A360	A361	A362	A363	A364	A365	A366	A367	A368	A369	A370	A371	A372	A373					
A374	A375	A376	A377	A378	A379	A380	A381	A382	A383	A384	A385							
REPRINTS:		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12					
A13	A14	A15	A16	A17	A18	A19	A20	A21	A22	A23	A24	A25	A26					
A27	A28	A29	A30	A31	A32	A33	A34	A35	A36	A37	A38	A39	A40					
A41	A42	A43	A44	A45	A46	A47	A48	A49	A50	A51	A52	A53	A54					

Name..... Title.....

Mill..... Address.....

Home Address.....

City..... State..... NOVEMBER, 1960 - 1

Good Ideas—Your Best Bet for Lower Costs

You'll find lots of good ideas in TEXTILE WORLD reprints — special copies of outstanding articles from past issues. Below is a partial list of titles now available. To get those you want, circle the appropriate number on the other side of this Reader Service Card, drop the card in the nearest mailbox. We'll fill your order promptly — and bill you later. If you prefer, put the card in an envelope and enclose your check. Prices quoted below are for single copies. Quantity prices on request.

MANUFACTURING

A-3 Preparation and Bleaching—A Textile World Refresher..$1.25

A-4 The New Resins for Treating White Cotton $1.00

A-5 Cotton Crushproofing..$1.00

A-6 Man-Made Fiber Table — 1960 Supplement $1.00

A-7 Man-Made Fiber Table — 1959 .....$1.00

A-8 Atlantic City Report—What Mill Men Saw . . . Why They Got Excited ..... .50

A-9 Metallic-Yarn Wet-Processing Guide ..... .50

A-10 Here's a Quick Way to Identify Fibers ..... .50

A-11 Cotton-Fiber Table... .50

A-12 How to Reduce Card Waste ..... .50

A-13 Report on Nonwoven Fabrics ..... .50

A-21 Building-Material for Plant Construction ..... .25

MANAGEMENT

A-16 Tips That Will Make You a Better Manager ..... .50

A-17 Your Problem Employees: 1. How to Spot Them—2. How to Handle Them ..... .50

A-18 What Superintendents Expect of Overseers ..... .25

A-19 How to Measure and Compare Mill Performance ..... .25

A-22 Integrated Cost Reduction ..... .35

A-23 What to Do About Those Business Records ..... .35

A-24 Key Facts You Should Know About Traveling Cleaners ..... .50

A-25 Preventive Maintenance — Why You Need It, What It Can Do ..... .35

A-26 Rules of Committeemanship ..... .35

FIRST CLASS
Permit No. 64
(Sec. 34.9 P.L.&R.)
NEW YORK, N. Y.

BUSINESS REPLY MAIL
No Postage Stamp Necessary if Mailed in the United States

Postage Will Be Paid By—

TEXTILE WORLD

330 W. 42nd Street

NEW YORK 36, N. Y.

McGraw-Hill Publishing Co., Inc.

FIRST CLASS
Permit No. 64
(Sec. 34.9 P.L.&R.)
NEW YORK, N. Y.

BUSINESS REPLY MAIL
No Postage Stamp Necessary if Mailed in the United States

Postage Will Be Paid By—

TEXTILE WORLD

330 W. 42nd Street

NEW YORK 36, N. Y.

McGraw-Hill Publishing Co., Inc.

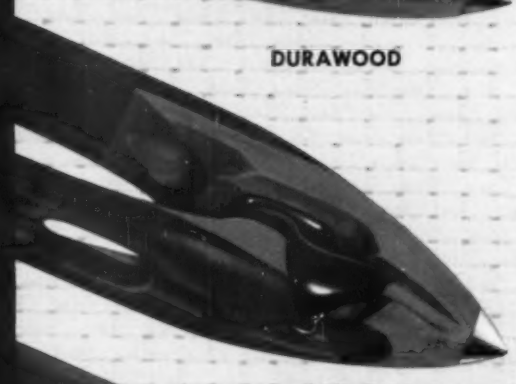
RAYON? AZLON? VINYON? SPANDEX? POLYESTER? ACETATE?

Just names for man-made fibers like those listed above don't tell you anything about the properties of these new fibers. They don't tell you about breaking tenacity, tensile strength, water absorbency, or alkali effects. Where can you get such information? From TEXTILE WORLD's Man-Made-Fiber Table, both in the 1960 Supplement and in the 1959 Table — each of which is available now. Circle A-7 and A-6 on the Reader Service Card. . . . $1 each.

City..... State..... NOVEMBER, 1948 • 1

TEMPERED DOGWOOD

DURAWOOD



DURAWELD

DURAMOLD

Southern Quality Shuttles

Cost Less In The Long Run

Southern Shuttles are the answer to demands by textile mill men for longer, trouble-free shuttle life and better quality weaving. Here are examples of Southern's Quality line.

TEMPERED DOGWOOD—The finest natural wood shuttles treated with Southern's exclusive tempering process, making them extremely tough, wear-resistant and stable.

DURAWOOD—Southern's Tempered Dogwood shuttles further improved by an exclusive process of compression under heat. They are longer lasting, fracture-resistant, and slightly denser. They provide 50% greater life expectancy at a very nominal additional cost.

DURAWELD—These shuttles offer 100% longer life expectancy with a very moderate weight increase. Greater strength is assured through use of tempered dogwood end blocks for resiliency and tip retention, permanently bonded by an exclusive Southern method to long wearing wall sections of laminated wood or plastic.

DURAMOLD—Made of Westinghouse Micarta, remarkably strong, grainless molded plastic. Duramold shuttles last 3 to 4 times longer than natural wood shuttles, require less maintenance, reduce down time and weave better cloth. These are absolutely the finest shuttles on the market today.

SOUTHERN has a complete line of shuttles for you to select from—any size, any shape, any type, for any loom. You name it—Southern has it. Many standard sizes are in stock for immediate delivery.

World's largest manufacturer of all type Shuttles. Comparison made them famous.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

TEMPERED · QUALITY Stehedco CONTROL · STEHIDE

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N. C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

Veeder-Root Pick Counters help boost Weave Room Efficiency

Here's what a few users of Veeder-Root Pick Counters say:

"We make pick-counter readings each day for each shift — it stimulates continued interest in the work—it enables us to spot sub-standard production and make immediate correction."

"Weaver efficiency is computed on a daily and shift basis — our payroll system needs this information daily. We post weavers' and loomfixers' efficiency daily."

"We post production percentages in the weave room — weavers and supervisors keep close check on these production figures."

"We use pick-counter readings to pinpoint low efficiency looms and, occasionally, to check a complete weave room."

Greater efficiency control is yours when you install Veeder-Root Pick Counters — available for countrolling single, two, three or four shifts. Count on Veeder-Root to help you boost your weave room efficiency. Just call your nearby Veeder-Root Representative.

Veeder-Root

HARTFORD 2, CONNECTICUT

"The Name that Counts"

New York • Chicago • Los Angeles • San Francisco • Seattle
St. Louis • Greenville, S. C. • Altoona, Pa. • Montreal
Offices and Agents in other principal cities

Get Your FREE Loom Efficiency Calculator

This Veeder-Root Calculator tells you at a glance whether you're maintaining your production efficiency. Write now for your free calculator.